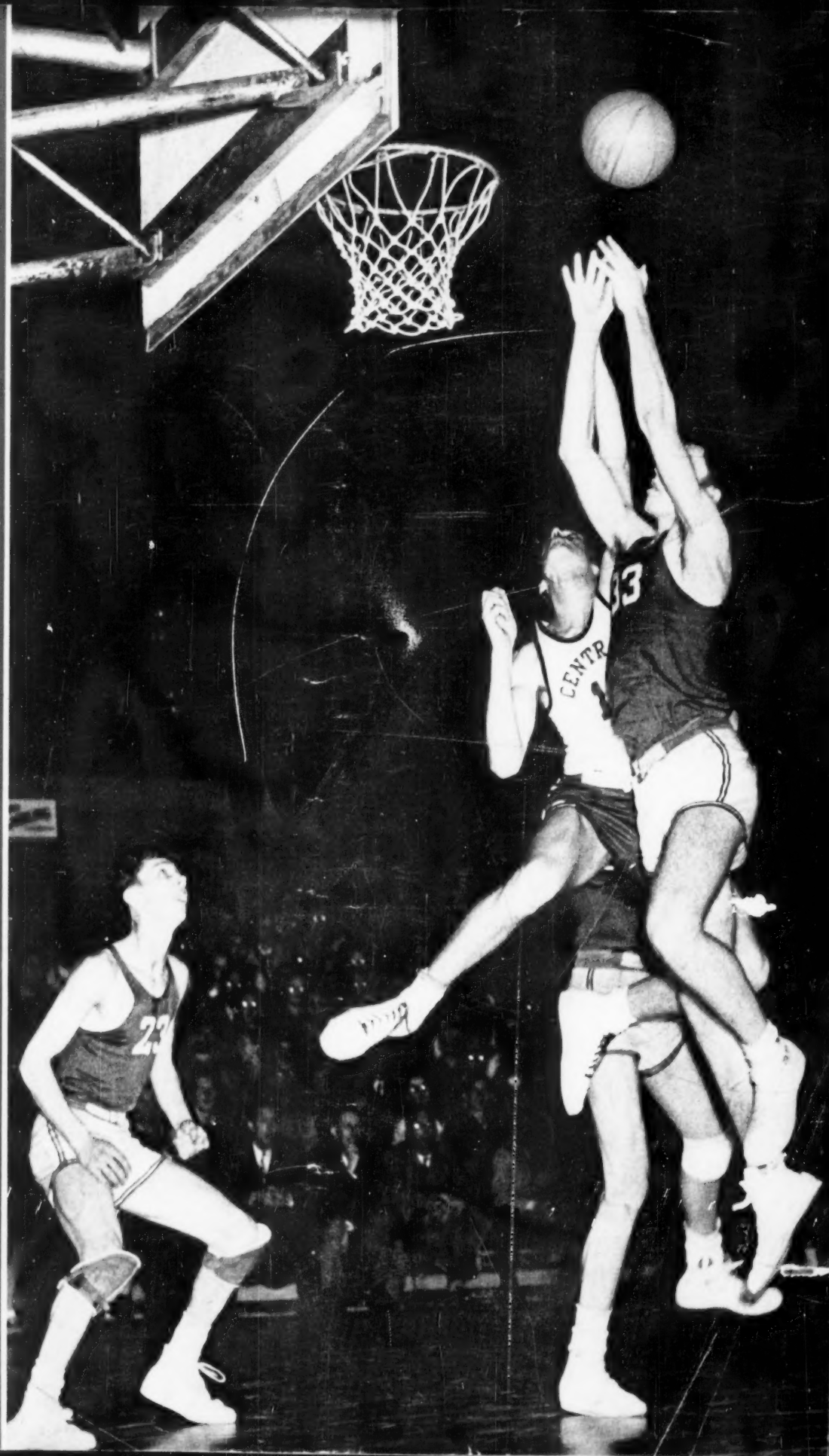


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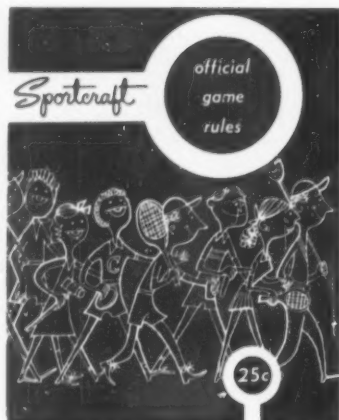
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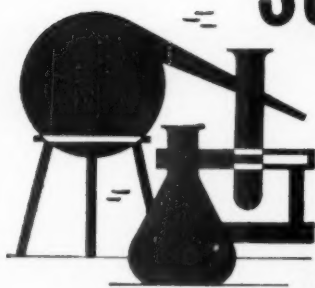
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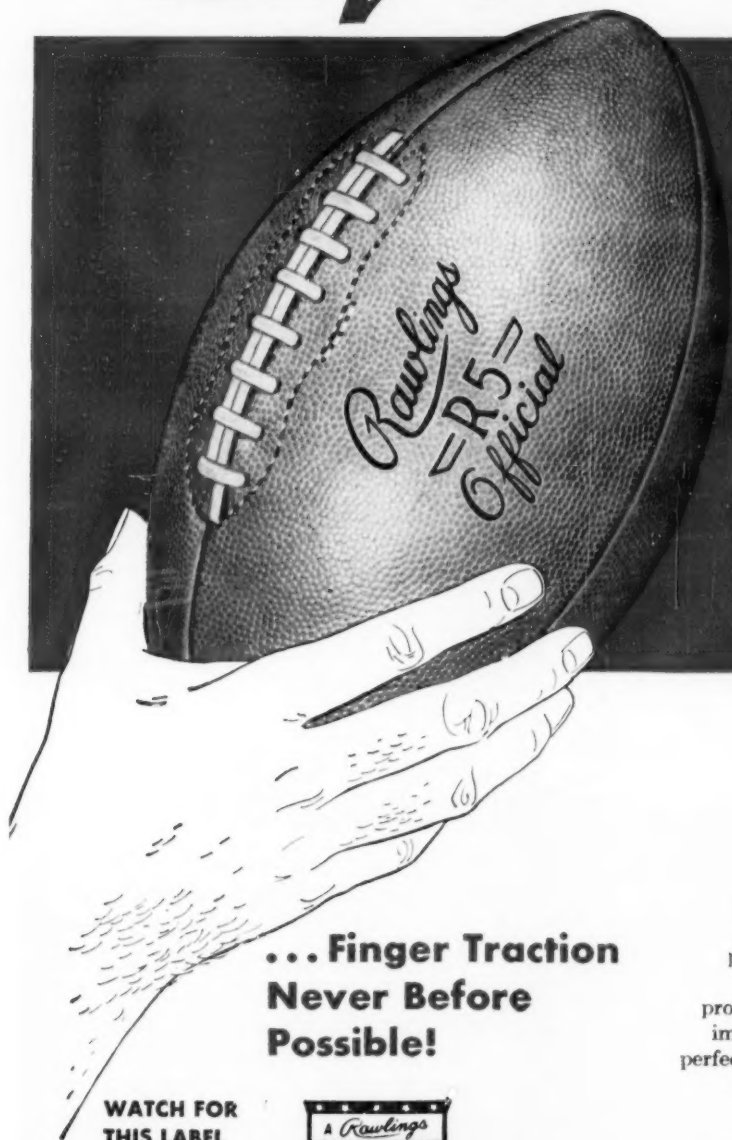
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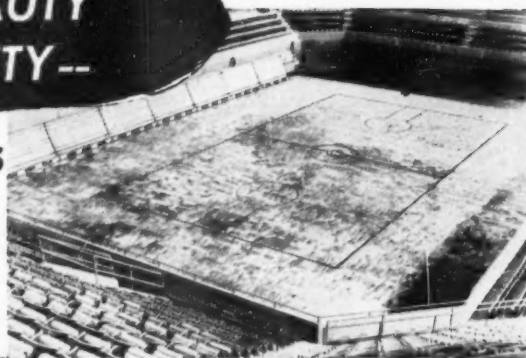
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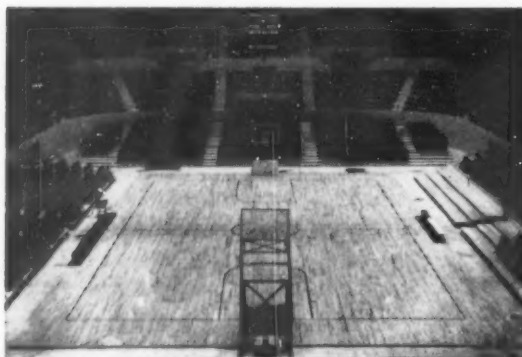
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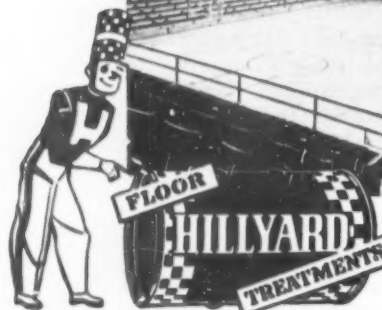
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Bevo's life and hard times

LIKE most semi-pro puritans, we're hardly enchanted by the shameless fashion in which Bevo Francis was built up and is now being exploited. We have a genuine sympathy for little colleges struggling for a place in the sun, but there's something distasteful about the way Rio Grande is merchandizing this tall, gangling package of basketball talent.

Barnum & Bailey exploited Gargantua in not too dissimilar fashion. The Rio Grande circus moves all over the country, putting Bevo on display wherever he can attract crowds. Where Gargantua performed in a cage, Bevo operates in a bucket.

Since Bevo is the only valuable property in the troupe, special pains are taken to safeguard his well-being. His defensive and rebounding chores are restricted to a bare minimum. For heaven only knows what would happen if Bevo caught an elbow in the eye or fouled out of a game. His scoring average might drop from 50.2 to 50.1—and people might begin believing that he's human after all.

At any rate, Bevo has been promoted into the biggest attraction since Jumbo. The furor over this hoop prodigy reached an awe-ful crescendo upon his debut in Madison Square Garden earlier this season.

Every sportswriter who could be flushed into the open air was ordered out to meet the plane carrying Rio Grande's chief hope for a new chem lab someday. It seemed that Bevo was arriving two days early to "plug" the "show."

Bevo's plane dropped out of the clouds at 6:30 p.m.—and pandemonium followed. By the time Bevo finished grappling with the news hounds and hot-footed to his hotel, it was nearly 8:00.

After a quick snack, he dashed off for a guest shot on Harry Wis-

mer's sports show over the ABC network. After the show, Bevo toured Broadway with a batch of photographers on (and under) his heels. The camera bugs kept the poor fellow busier than a dog with fleas, making him pose at every hot dog stand in the neighborhood.

When Bevo returned to his hotel the press nailed him again. One reporter wanted to know if he's actually the 6' 9" he's supposed to be—he doesn't look it. But Bevo stuck by his program credentials. He didn't get to bed until after midnight.

At breakfast next morning, a columnist joined Bevo for orange juice and conversation. After finishing his milk, Bevo was triple-teamed by some more reporters with questions. At noon, he went to an armory for practice—and more pictures!

AFTER finishing with practice and the cameramen, Bevo and his teammates went sightseeing. They took in, among other places, the United Nations and the Empire State Building. Then back to the hotel.

At 4 p.m., Bevo really moved into high gear. He spent an hour at ABC with shy, restrained, lovable Bill Stern. From 5 to 6, he made transcriptions with Mel Allen at NBC. From 6:10 to 6:15, he appeared on Jim McKay's CBS sports show.

Bevo then managed to sneak in a hamburger before showing up on Jimmy Powers' local TV show from 7:15 to 7:30. Precisely 15 minutes later, Bevo was in the WABD studios for still another telecast.

Having run out of sports shows for the nonce, Bevo was escorted to a fancy French restaurant for chow. After the dessert, Bevo picked up another head of steam. He took a bow between periods of a N. Y. Ranger hockey game and appeared on a telecast. He was in bed by 10:30. This was still Wednesday and the Adelphi game was scheduled

for the next day.

Thursday proved a breather, at least until game time. Bevo only saw a couple of newsreel photographers and a reporter from *Time* Magazine. At 4 p.m., Bevo & Co. ate dinner, then rested at the hotel until they reported to the Garden at 7.

BEVO'S performance against Adelphi aroused little enthusiasm among the hoop critics. They were pretty unanimous in their reviews. While admitting that Bevo exhibited a lovely jump shot, they faulted him in absolutely every other respect—defense, rebounding, feeding, maneuverability, and savvy.

All this criticism affected us in a queer way. We suddenly found ourselves defending Bevo! What in Dr. Naismith's name did the critics expect of Bevo? Sure, his reputation was built up against Class Q opposition. And sure, he isn't a well-rounded player. But his tremendous scoring potential more than compensates for anything and everything else.

Bevo's performances during the month of December clinched his artistic standing with us. Here was a small-town boy playing night after night against big-name schools all over the land—well-coached clubs out to do just one thing—stop Bevo!

And how did Bevo react under this tremendous pressure? Look at the record—32 points against Adelphi, 39 points against Villanova, 41 points against Providence, 34 points against North Carolina State, 32 points against Wake Forest, and 48 points against Miami.

And, remember, all this on strange courts against teams that were double- and triple-teaming him!

So talk all you want about beautiful feeders, magnificent drivers, gorgeous jumpers, and Einstein thinkers. We'll take Bevo.

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Hitting-Area Approach in Tennis Teaching



ALL of us who teach tennis are sometimes guilty of talking in terms of *style* rather than fundamentals. This is tantamount to building a house from the top floor down. The results may be interesting, but hardly make for a sound structure.

The prime concern of the tennis instructor should be basic principles. Once these have been thoroughly implanted, style will naturally evolve. It is with this thought in mind that the writer would like to offer an idea that will both facilitate and solidify the instructional process.

Called the "hitting area approach in tennis teaching," it can be used in teaching the basic shots—forehand, backhand, volley, and service.

To the untrained eye, there would appear to be a great many ways to hit a tennis ball. Actually, there are not. There are just a variety of *styles*, and style has little to do with the actual hitting of the ball. Style merely consists of personal mannerisms, a way of drawing the racket back, a way of ending. There are almost as many varieties of styles as there are players.

Nevertheless, analyze any series of strokes made by finished players and you'll find a common denominator—the *hitting area*. This area embodies the approach to the ball, the point of contact, and the follow through. In this vital "compound," every good player will be doing approximately the same thing.

Check this yourself. Look over several picture series of good forehands. Or take the thought with you to the next tournament you watch; and instead of watching the whole stroke, concentrate on the hitting area.

Or try to think of it this way: How many different things can be done in this area if you want to knock a ball with normal spin from several feet behind the baseline to a spot two feet inside your opponent's baseline? I'm sure you'll agree there aren't many.

Assuming you've accepted this idea, doesn't it make sense to relate all your teaching to this section, particularly when everything essential to hitting a ball (everything that doesn't involve style) is actually related to the hitting area? It stands to reason that you can facilitate your teaching by boiling it down, condensing it into the hitting area.

Now let's go into this in detail, after first listing all the fundamentals of the forehand that are important in this hitting area. (Since there are some slight variances in the backhand, this stroke will be taken up in a separate section later on. The serve and volley are best left for a later article.)

By JIM LEIGHTON, Jr.

Tennis Coach, Presbyterian College

The essential fundamentals are:

1. Be relaxed.
2. Watch the ball.
3. Take your racket back early.
4. Get into proper position.
5. Shift your weight from the rear foot to the front foot.
6. Swing your racket from inside the intended line of flight toward the outside on an upward plane.
7. Rotate your body.
8. Contact the ball with your racket in correct position to the desired line and plane of flight.
9. Follow through.

Go over them again and you'll find there's nothing else of any importance in hitting a forehand. These are the basic points listed in the actual order of execution—Nos. 6 and 7 occurring simultaneously. Now, let's talk about the importance of each one in relation to the hitting area.

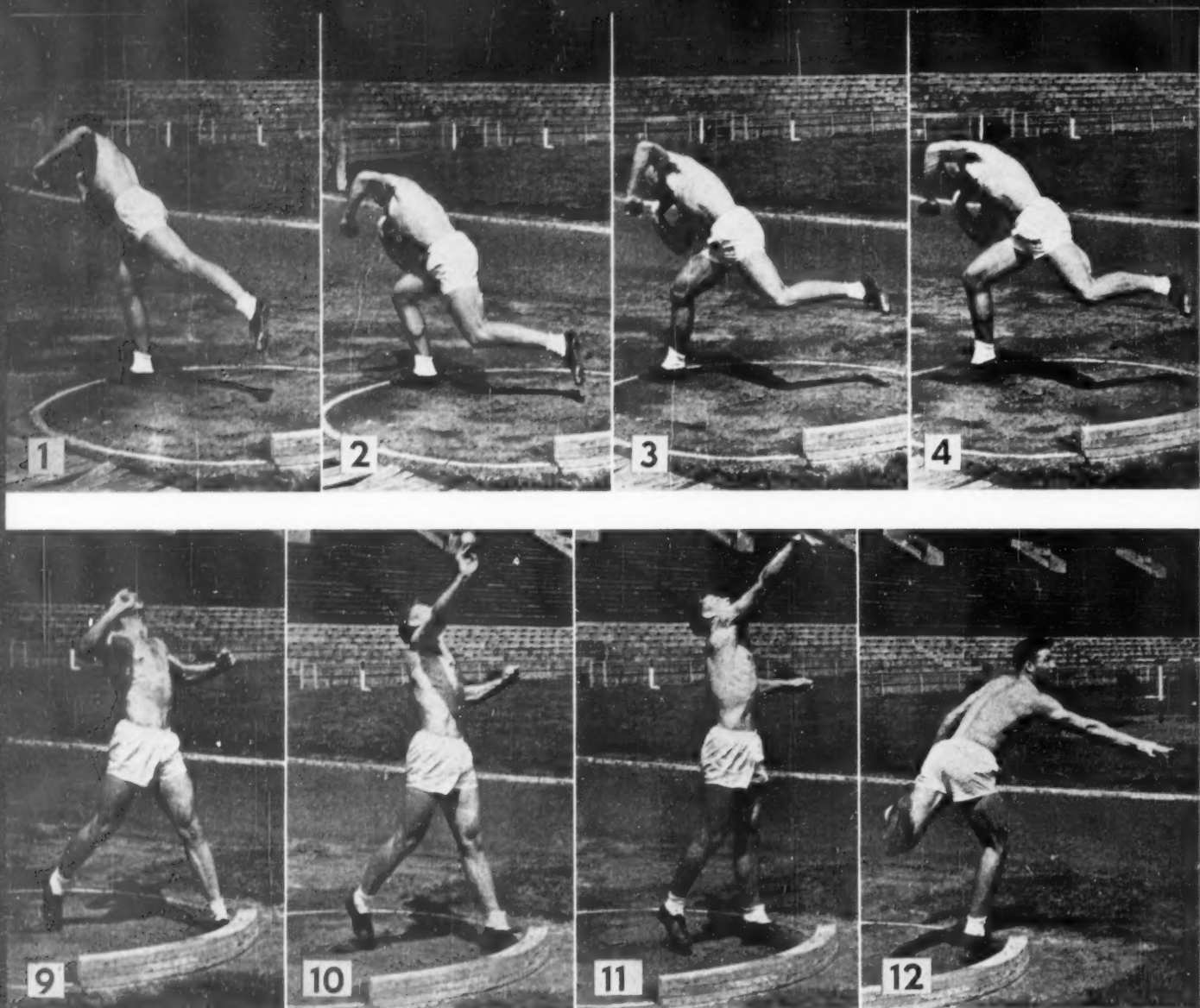
The approach to the ball is a small part of the whole. It's here that the racket is lined up behind the ball approximating a perpendicular position to the intended line of flight.

BE RELAXED

Relaxation is something you constantly preach, of course, but let's highlight the actual contact of racket and ball to see exactly what happens at this point and just how important relaxation actually is.

In the relaxed swing, the strings give at contact, the amount depend-

(Continued on page 52)



DARROW HOOPER • 2nd Place, 1952 Olympics • Best Throw: 57' 1 $\frac{3}{8}$ "

NO. 1: Initial stance with upper trunk turned to rear, right hip tucked, right foot pointing to rear. Shot is carried outside back edge of circle, putting it maximum distance from board. This increases distance shot will travel before release, making for greater acceleration.

NO. 2: Dropping hips down and forward as right leg flexes is first stage of movement across circle. Note relaxed left arm and fine cocked position.

NO. 3: Coordinating forward hip drop with drive from right leg and forward swing of left leg. Left arm and shoulder remain in same relative position as at start to keep closed position.

NO. 4: Still in fine closed position as forward movement continues. Note right spikes dragging, enabling Hooper to keep contact (and thus stability) with ground.

NO. 5: Right foot is planted and left leg is still coming down. Upper trunk is still in cocked position it assumed at rear of circle, and head is still to rear.

NO. 6: Left foot is planted and Hooper has started to

drive back of left shoulder up into put. In a sense, he's lifting right side of body and thus the shot.

NO. 7: Hooper has lifted up and is now coming into put. He's "hitting" the shot. Note strain on left leg as it is used to work against and aid in drive up into put.

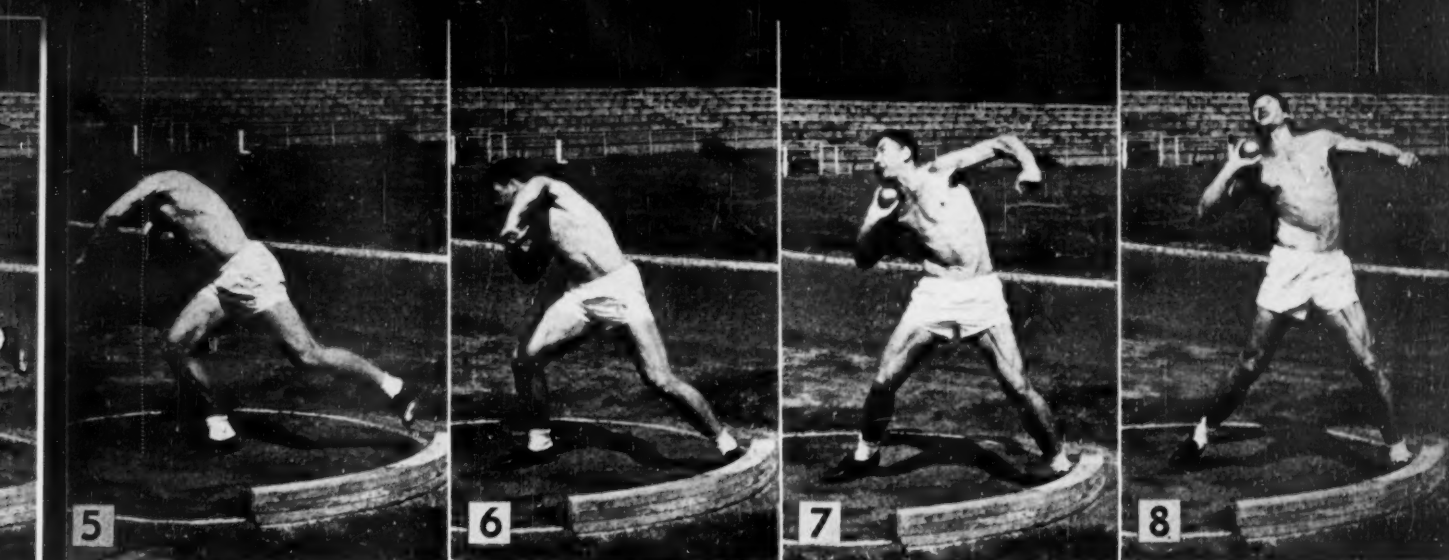
NO. 8: Wonderful position as athlete continues to drive up into put. Note that he hasn't pulled away from shot by letting left shoulder drop, and that right forearm is directly behind shot.

NO. 9: Momentum has carried Hooper over and almost up on left leg. He's taken all possible from powerful right leg. Left leg will serve as power base for final stage.

NO. 10: In final stage, Hooper's right leg is just slightly off ground while he still has contact with shot.

NO. 11: Ideal position with chest and chin up and putting arm following through in line of put.

NO. 12: Hooper has driven up and into put with such force that he must reverse feet to keep from fouling.



Shot-Putting Horizons

FOLLOWING a clinic session at the N.C.A.A. track meet in Lincoln, Nebr., last June, a small group of coaches was just getting ready to leave when Parry O'Brien and Darrow Hooper wandered in. Needless to say, it was two hours later when they wandered out.

That two-hour period resolved into one of the most interesting and thorough shot-putting clinics ever held. Two highly intelligent young athletes, with a clinical knowledge of every facet of their event, gave an amazingly frank discussion of their style, purposes, training, and experiences—while several of America's leading weight coaches laid down a barrage of technical questions on every point.

From this unscheduled, spontaneous meeting, one could only conclude that shot putting is on the threshold of yet another new era. Coaches and athletes are truly looking toward new horizons.

Since Ralph Rose of the University of Michigan (the first man to put the shot 50') set his world mark of 51' in 1909, many great athletes have contributed to Uncle Sam's amazing world domination of this event. John Kuck of Kansas, 52' $\frac{3}{4}$ " (1928), Leo Sexton of Georgetown, 53' $\frac{1}{2}$ " (1934), the giant Jack Torrance of Louisiana, 57' 1" (1934), plus a host of others like Houser, Blozis, Hackney, and Thompson, quite naturally have contributed to America's vast knowledge and skill in shot putting.

However, it's the last three world

By **DON CANHAM**

Head Coach, University of Michigan

record holders—Charles Fonville of Michigan, 58' $\frac{3}{8}$ " (1948); James Fuchs of Yale, 58' 10 $\frac{3}{4}$ "; and Parry O'Brien of Southern California, 59' 2 $\frac{3}{8}$ "—who've made possible the astounding recent improvement in the event.

Each has contributed something so simple, yet so basic, that we can now look back and wonder why it wasn't discovered long before. Their contributions are so sound, however, that they've lifted the sights for putters the world over.

The first contributor following World War II was Charlie Fonville of the University of Michigan. His success stemmed from his application of far greater speed with a very powerful putting position. The emphasis he placed on *continuous acceleration of the shot* has now become universally adopted.

Yet his most important contribution was the lifting of a mental barrier that prevailed until his time. When the track world read that Fonville at a mere 195 pounds had surpassed the record held by the giant Jack Torrance (57' 1") by nearly a foot, it sat back to think.

If Fonville, weighing less than 200 pounds, could put more than 58', what could a man 30 pounds heavier with comparable speed do? With men like Fuchs, Thompson, Lampert, Chandler, and others on the

horizon, the answer was not long in coming.

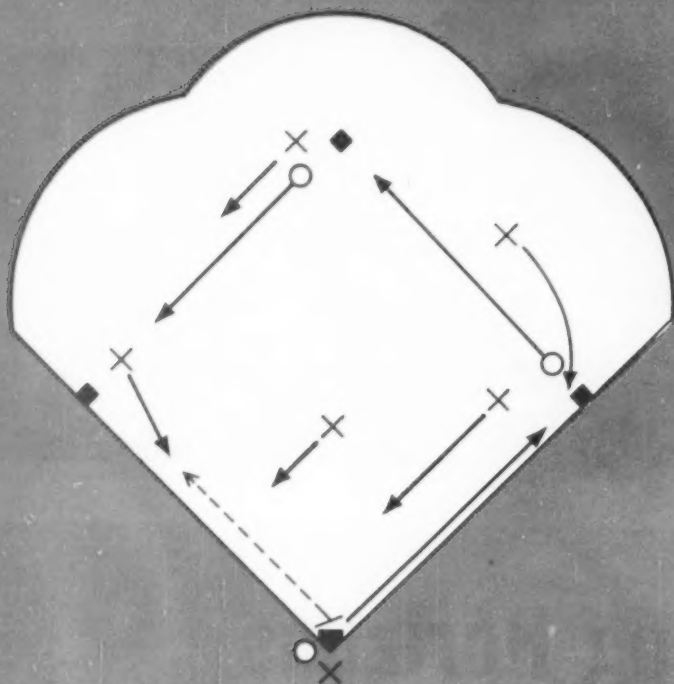
It was, of course, Fuchs, a former sprinter weighing 225 pounds, who made the next contribution. Using a style based on speed, he was able, by form adjustments, to get into a remarkably powerful position that most putters until then hadn't been strong enough to use.

When he established his world mark of 58' 10 $\frac{3}{4}$ " in 1950, Fuchs showed the world that while Fonville may have been considered form perfect, further refinements leading to more speed and power would continue to be made by men like himself, who were big enough, strong enough, and fast enough to do so.

The most recent contributor, of course, is Parry O'Brien of Southern California. Perhaps Parry's is the most important contribution of all, and only the years ahead will tell. While he made some form refinements of his own, his obsession for putting, which led to fantastic amounts of work, must go down as his real contribution.

For no shot putter in history (including Fonville and Fuchs) has put the shot as much as O'Brien. His passion for the event has set the work standard for putters of the future. The tales of O'Brien's three hours of practice every day, and his return from night meets only to go out under lights for additional work are well-known. Yet an experience with him during the summer of

(Continued on page 40)

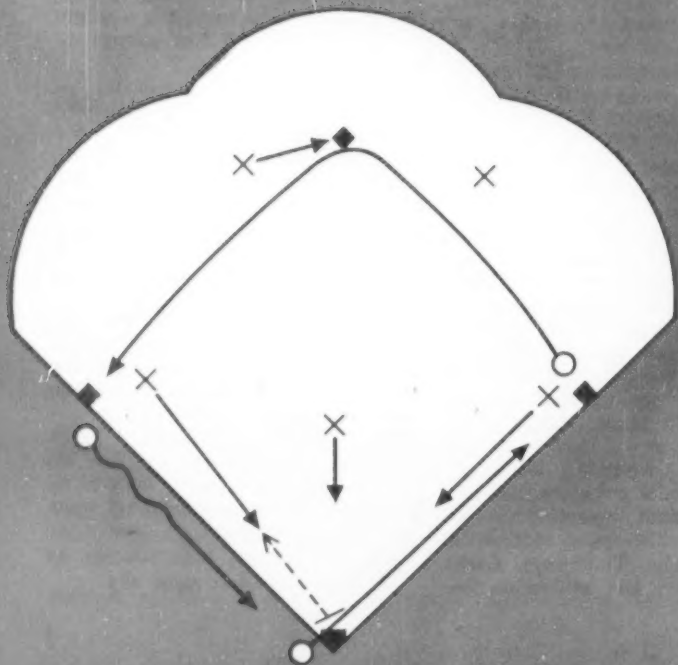
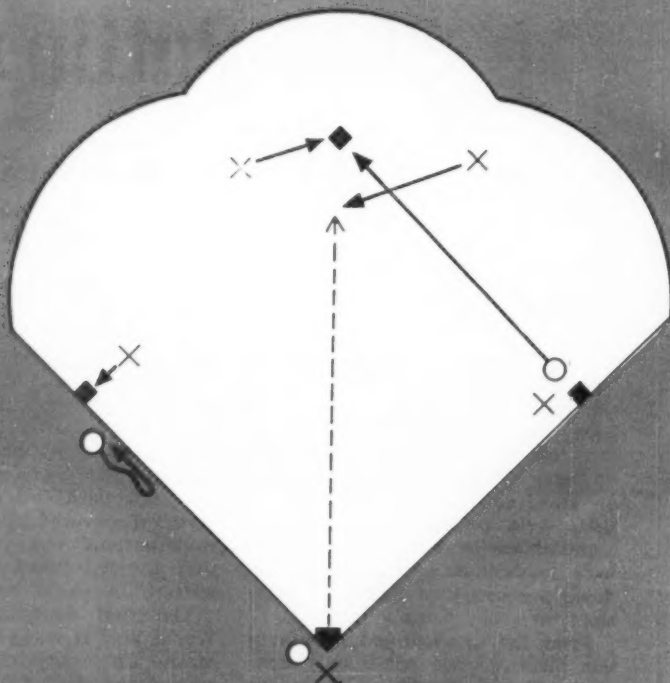


Sacrifice with Men on 1st and 2nd

Batter must bunt long down 3rd base line—forcing baseman to field ball (too long for pitcher). Both runners must take good leads and move fast soon as bunt hits ground, sliding into next base. **Fake:** After play has been worked in game (i.e., forcing 3rd baseman to field bunt), play may be faked. In some situation, a fake bunt will usually pull in 3rd baseman and enable runners to work double steal.

Single Steal with Men on 1st and 3rd

As pitch is made, runner on 1st digs for 2nd. As catcher throws to 2nd, and 2nd baseman comes in for possible cut-off, runner on 3rd fakes for home to force 2nd baseman to cut off throw. He then makes a quick turn and slides back to base. Runner on 3rd should not take too great a lead before initiating fake. If shortstop covers 2nd and 2nd baseman backs up and directs play, double steal is most effective.



Sacrifice-Squeeze, Men on 1st and 3rd

Idea is to squeeze in runner on 3rd and sacrifice runner on 1st to 3rd. Batter places bunt down 3rd base line. Runner on 1st goes to 2nd and continues to 3rd as baseman goes in to field ball. Runner on 3rd comes in slowly on pitch and charges in fast soon as ball hits ground. Delay by runner on 3rd helps play. By faking well, he can often make 3rd baseman hesitate on throw to 1st. He follows baseman in slowly, and as latter throws to 1st, he charges home. It takes two perfect paces to get him at plate.

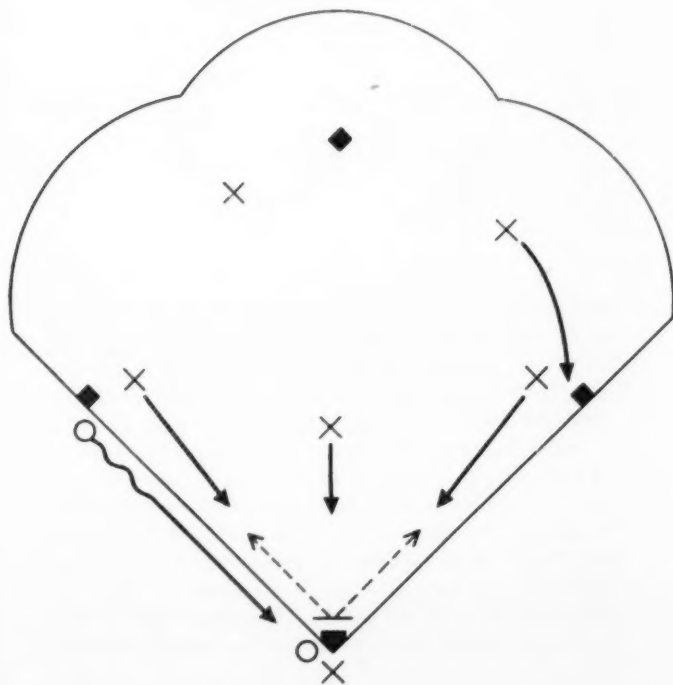
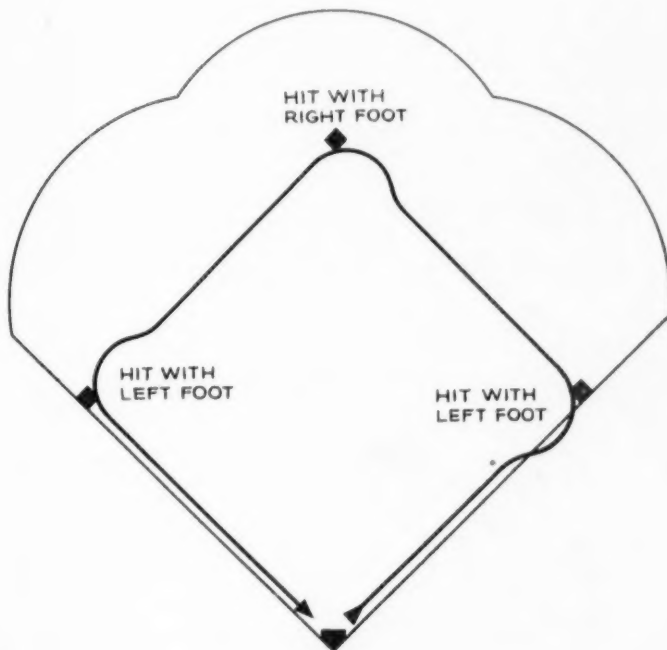
Offensive Baseball Plays

By JOE BEDENK, Coach, Penn State

SINCE weather conditions at Penn State prohibit much outdoor work in the early spring, we spend considerable time on indoor skull sessions, covering many basic techniques and plays. Our session on offensive plays is depicted in the accompanying diagrams. Such blackboard-and-lecture periods serve both to develop the proper mindset and to impart information, thus lightening the instructional load outdoors.

The Proper Way to Run Bases

Base running involves more than just running in large circle. Batter should go directly for 1st and make small arc just before bag. He touches inside of base with inside (lt.) foot and crosses over with rt. foot to assure smallest possible arc. Same rules apply at 2nd except that rt. foot now hits inside of bag. At 3rd, runner makes same move as at 1st. Touching inside of bag with lt. foot forces runner to come straight down line. In short, runner should go straight into base so that he can slide to either side—or make small arc and continue.



Squeeze with Runner on 3rd Base

Batter must bunt (on signal) about 5 to 10' into infield—making either 1st or 3rd baseman travel longest distance from their position to field ball. (Catcher can't leave plate on this play.) Runner doesn't start in too soon. He comes in slowly on wind-up, so pitcher cannot detect whether he's coming home or just faking. As ball leaves pitcher's hand, man digs as fast as possible for plate. *Delayed steal:* Runner comes in slowly behind 3rd baseman fielding bunt. When fielder throws to 1st, he breaks fast for home—being alert for fake throw.

Mechanics of S

By KEN DOHERTY

Track Coach, U. of Pennsylvania

WITH so many authoritative analyses of sprint starting available, one more coach's opinion can hardly hope to offer a contribution to the literature on the event.

The road to practical benefaction lies in another direction, and it is with this thought in mind that the writer would like to dwell on the scientific principles underlying certain aspects of sprinting, as deduced from experimental studies and from an all too limited knowledge of anatomy, physics, and physiology.

Though some of the opinions are necessarily arbitrary and subjective—thanks to the complexity of the subject matter—the effort should stimulate a great deal of thinking

and lead to improved coaching practices.

Where should the back starting block be placed?

Most textbooks and coaches avoid any specific instruction, but suggest a point between 28 and 40 inches from the starting line. The few and indefinite reasons given are safeguarded by the suggestion that each sprinter should experiment for himself to find the exact location.

In the writer's opinion, the back block should be so placed that the back leg can build up maximum force as quickly as possible and still provide adequate time in which this force can be applied. Of these two factors, force and time, the recent work of Franklin Henry¹ concludes that the former is the more important.

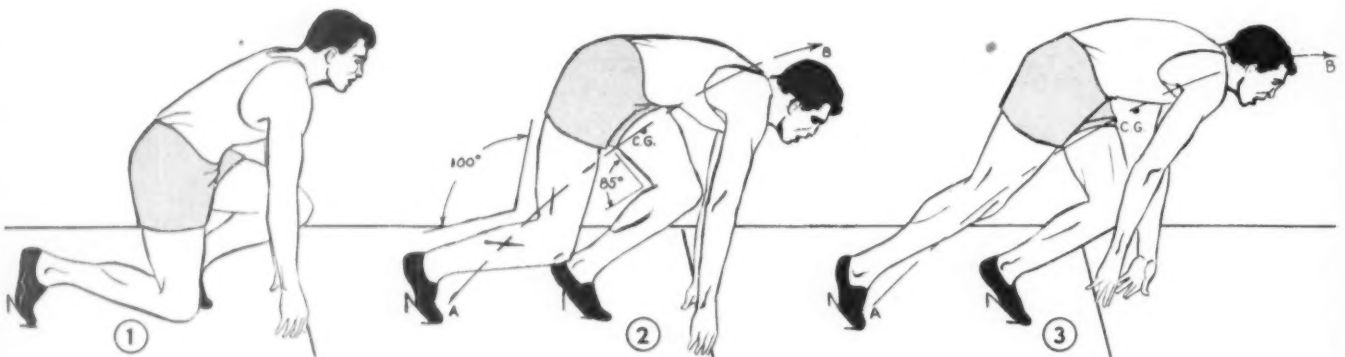
Slow and fast sprinters do not differ significantly in the length of time the back foot stays in its block.

But fast sprinters do build up more quickly a much greater force (average: 160 lbs. pressure) than do slow sprinters (average: 110 lbs. pressure).

It seems clear that the primary function of the back leg is to initiate action as powerfully and quickly as possible rather than gradually building velocity, as might occur if the foot were close to the starting line.

What block placement, then, will provide the greatest force against the block? No studies are known to the writer which deal directly with this specific problem. Henry¹ states that a 21-inch spacing between blocks produces the fastest velocity in the start, but does not locate the blocks other than relative to each other.

However, in studying the mechanics of the leg lift, Cureton² found that an angle of 102° at the



EXCELLENT FORM IN SPRINT START as defined in accompanying article (illustrations adapted from drawings in Ken Doherty's book, *Modern Track and Field*).

Position 1: Athlete is relaxed and well-balanced with wt. resting primarily on back knee and front foot. This rests fingers but necessitates a swing forward and up when getting set, thus making set position a little less certain. Eyes are focussed on a spot not more than 10' away.

Position 2 is key to entire action. While eyes and head are unchanged, shoulders are now well ahead of starting line—as far as good balance in Positions 5 and 6 will permit.

Height of hips has also been established in terms of balance in Positions 5 and 6. The faster the man, the longer the stride; and the more intensive the practice, the higher and more forward the hips can be placed at "set." The overall direction of force, as in all these figures, is along line A-B, as established by base (right foot in Positions 1-3, left foot in Positions 4-5) and center of gravity (c.g.). Angle of back knee is close to 100°, which establishes correct position of back block. Angle of front knee is close to 85°, which establishes correct position of front block. This statement is crucial to article's point of view. Incidentally, blocks are placed in so-called elongated or "orthodox" start. (Called "orthodox" because from 1920-35 it was accepted method.

Sprint Starting

knee joint produced the strongest upward thrust. It seems reasonable to assume that a similar angle would produce the best results in the starting blocks. It not only would provide the greatest immediate thrust so essential to initiating action, but would also permit a duration of force while the back leg is straightening through over 70° .

However, the back block still isn't placed exactly, for one can vary the angle at the knee from any given block position by swaying forward as well as by raising or lowering the hips when in the "set" position. This leads us to the second problem.

How far forward beyond the starting line should the shoulders swing and how high should the hips be raised when getting "set"?

Several effects require consideration. To swing the weight forward, even though high, puts the unit of

power—the legs—behind, rather than under, the weight to be moved. This is an advantage if leg action is fast enough to prevent stumbling during the first few strides.

It is sound physics to state that when an object is falling, its potential energy forward is proportional (1) to the height of its center of gravity from the ground, and (2) to the distance its center of gravity is forward of its base of support. That is to say, assuming equal mass, a taller pole leaning off the vertical has greater potential force than a shorter one; and, secondly, its force is proportional to its forward lean.

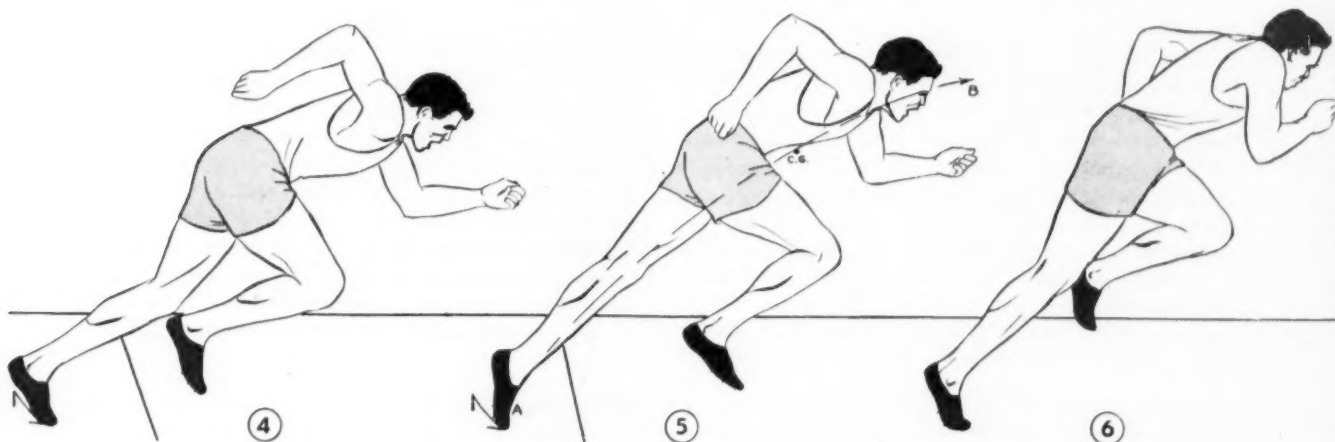
However, this potential aid to velocity can only be utilized through persistent drill, for the inability of the feet to move forward fast enough to a position of effective support results in stumbling. Incidentally, the faster the sprinter, the

more he can use this method. With faster leg action, he can afford a slightly more forward center of gravity when "set" than a slower man, who would find this impractical.

Lifting the hips has another effect, also. It raises the center of gravity above the line of force along which the legs are driving. If one were to draw an imaginary line from the back starting block to a point about 10 yards out and 3 feet above the ground, one could assume that the center of gravity should remain exactly on this line, especially during the "set" and during the first few strides.

If the hips are high above this line and not forward, the direction of force will be upward rather than out toward the finish line. The loss in power and velocity would be appreciable.

Of these two effects, the latter

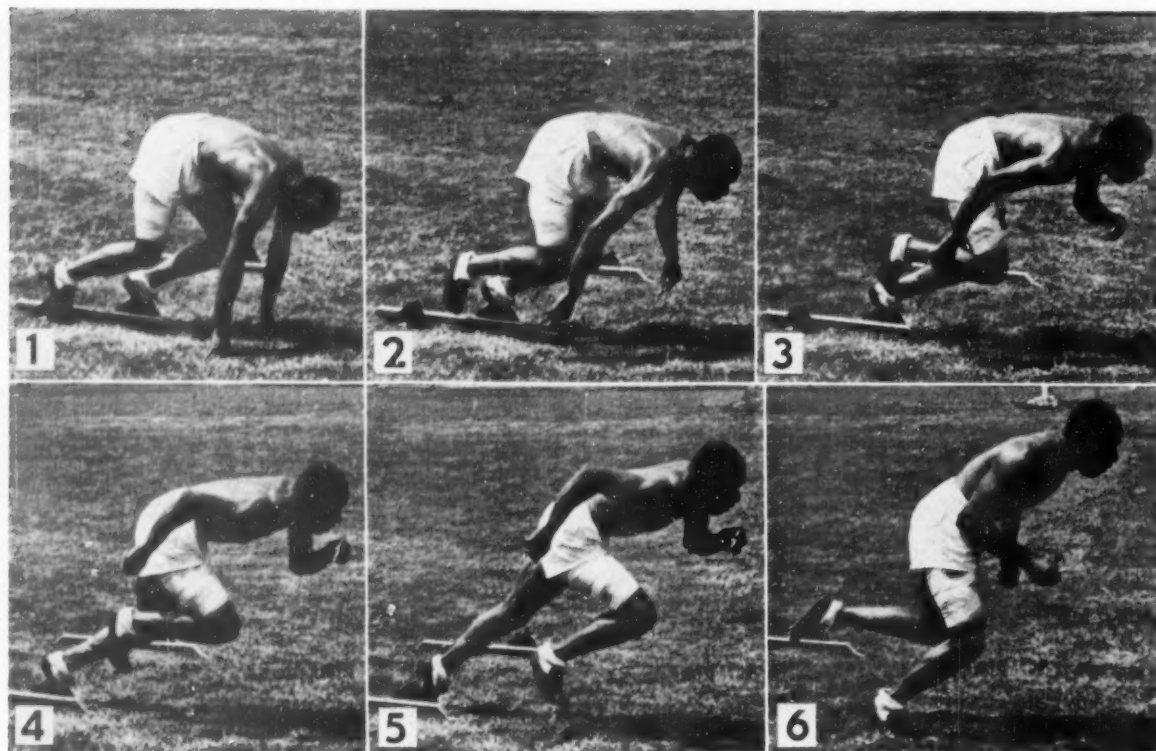


Since then, thanks to research of Bresnahan and Tuttle, it has proven less popular, but through later work of Henry it will undoubtedly return to wide acceptance.) For this particular individual, block separation is about 20", but basis for this measurement lies in knee angles and position of c.g., rather than in arbitrary placement of blocks.

Position 3 is close to perfection. Overall direction of force is down track at about 30° , rather than up and out. Position of eyes and head is unchanged relative to torso. Left hand is first to move and is driving low and straight ahead toward its position in 4. One of the worst and more common faults in starting is to lift lead hand up close to

head so that body straightens almost immediately. At moment rear foot gets its final push from its block, angle of front knee will be just over 100° (angle of maximum power).

Positions 4-6 can be examined together. Sprinter seems to have straightened his running angle too soon. In Position 6, he's already close to 45° , which ideally shouldn't be reached until at least 10 yards out. Arm action is perfect. Back drive of rear arm has been emphasized, aiding forward lean, and full, natural stride has been achieved, preventing stumbling. Eyes are still down, though gradually lifting toward horizontal. In summary, one has impression of relaxed quickness rather than all-out effort.



ARTHUR BRAGG, Morgan State College, National AAU Champion at 100 Yards, :09.5, 1953. Bragg has placed blocks in "bunch" start position with about 12" between blocks and about 17" between front block and starting line. Hips (and center of gravity) are high and could produce stumbling during first few strides. However, Bragg's quick lifting of head and excellent knee action in 4-6 help balance this tendency. In fact, they appear to over-balance it, for Bragg straightens running angle very quickly and has already reached approximate angle of 45° by his first stride in last photo. (This angle should not be achieved until about 10 yards out.) This straightening effect has been aided by upward jab of forward left arm which, in No. 4, is too close to chin, and by failure of

right arm to swing backward far enough to promote forward inclination of body. Position of right foot in Nos. 2-5 is very interesting and brings up controversial point. Some coaches claim foot should come through close to ground with as little lift as possible. They argue that the higher it's lifted, the slower it will be in placement. Others take opposite point of view. They contend that by lifting foot, weight arm of upper leg lever is shortened, thus producing greater efficiency in use of power and a faster action. The traditional "ideal" action shot is indicated in No. 5. The straightened back leg always tends to produce at least illusion of perfect form. However—and this warning applies to all single action photos—this picture needs to be studied in light of what occurs both before and after.

should have greater importance. It seems reasonable that the effect of the "falling" action is not so much in the force it directly creates as that it tends to keep the center of gravity ahead of the feet and in line with the desired direction of force.

Where should the front block be placed?

Answers to this problem vary more than to any other connected with starting. Most writers and coaches refer to types of starts. Canham³ describes them as the bunch, the elongated, and the medium. Henry¹ writes of the 11-inch spacing, the 16-inch spacing, the 21-inch spacing, and the 26-inch spacing, which he probably borrowed from Bresnahan and Tuttle⁴.

But all such efforts at classification are unnecessarily arbitrary and fail to think through the factors by which the individual sprinter can reach a decision. There's no special virtue in a name, nor even in a particular number of inches, per se. Henry might just as properly have chosen 10, 15, 20, and 25 inches for his study. But there should be some basis consistent with the facts of kinesiology and physics by which an intelligent approach can be made.

Again the best work on this problem is that of Henry¹. He assumes, very correctly, that the essential criterion for evaluating starting is the velocity gained by the body out of the blocks and during the first 5 yards. According to his work, place-

ment of the front block should consider the length of time of application of force as being more effective than the magnitude of force or the quickness with which the block is cleared, as was assumed by Bresnahan and Tuttle⁴.

"Although the rear leg develops considerably more force than the front, the latter contributes twice as much to the velocity out of the blocks because its impulse has a longer duration"⁵. On this basis, Henry found that the wider the spacing between the blocks (which implies a more forward placement of the front block, since the rear block was relatively fixed), the longer the time in which the front



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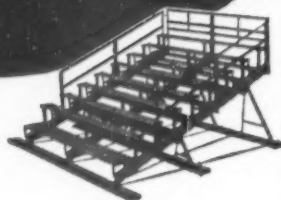
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leg pushed against its block.

When the front block is placed 11 inches forward of the back block, as in the so-called bunch start, the average duration of time of application of force is 0.35 seconds, whereas with 26-inch spacing, the average was 0.44 seconds, a significant difference in terms of affecting body velocity. Actually, Henry found that the greater velocity achieved from the widest spacing, 26 inches, was lost within the first 10 yards.

In the writer's opinion, this loss might well have been caused by improper use of other factors—poor balance when "set", incorrect angle of the head and eyes during "set" and of the body during the first 5 yards, failure to move the legs forward quickly and properly, etc. Further research is called for.

A close study of Henry's charts indicates that fast sprinters are able to build up maximum force by the front leg at about 0.15 seconds after the first action by the back leg. This is just before the back foot leaves its block at 0.17 seconds, a very important point to keep in mind. This phenomenon occurred without regard for block spacing.

What should be the inclination of the head and the direction of focus of the eyes during "set"?

The answer seems certain. They should be directed downward in order to implement the forward lean just advocated; yet not so far as to cause stumbling and imbalance which even persistent drill cannot overcome.

What should be the angle of inclination of the body during the start and throughout the sprint?

Human locomotion takes place, in part, by "falling" forward, by continuously moving the weight forward ahead of the points of support and of force. As long as the center of gravity is directly above the center of support, there can be no forward movement.

Further, as the speed of movement increases, the angle of inclination tends to increase. When it does not do so, the flexor and extensor muscles of the legs are unable to apply maximum force effectively. It seems logical to assume that if human muscles are fast enough to make full use of it, a forward angle of 45° would be best.

Such angle is determined by a line drawn from the back foot through the center of gravity at the moment the back foot is completing its push off the ground. At this point, 45° isn't as excessive and improbable as first thought might indicate. During the first few strides, this angle will be as low as 30° to the ground.

IT'S a pleasure to welcome Ken Doherty into the fold for the fifth straight year. A former decathlon champion, Ken has been coaching brilliantly for the past 25 years. Nobody knows more about track than the U. of Pennsylvania coach. His book, Modern Track and Field (Prentice-Hall, Inc.), represents the most comprehensive, most brilliant, up-to-date track text available.

What is the value and action of the arms during the start?

The direct power effects of arm action in driving the body forward are equal to approximately zero⁶. Not only are the arms of relatively low weight as compared with that of the body, but the effect of the forward swing, even at the start, must always be nullified by the backward swing, no matter how the former may be emphasized in the mind of the sprinter or his coach.

The value of arm action should be stated in terms of balance, body angle, and relaxation. Balance means that they should swing so that the shoulders are not pulled out of line and so that the forward inclination of the body will be aided. Relaxation is an equally important consideration. In general, if the arms are relaxed, the entire action will be relaxed and more efficient.

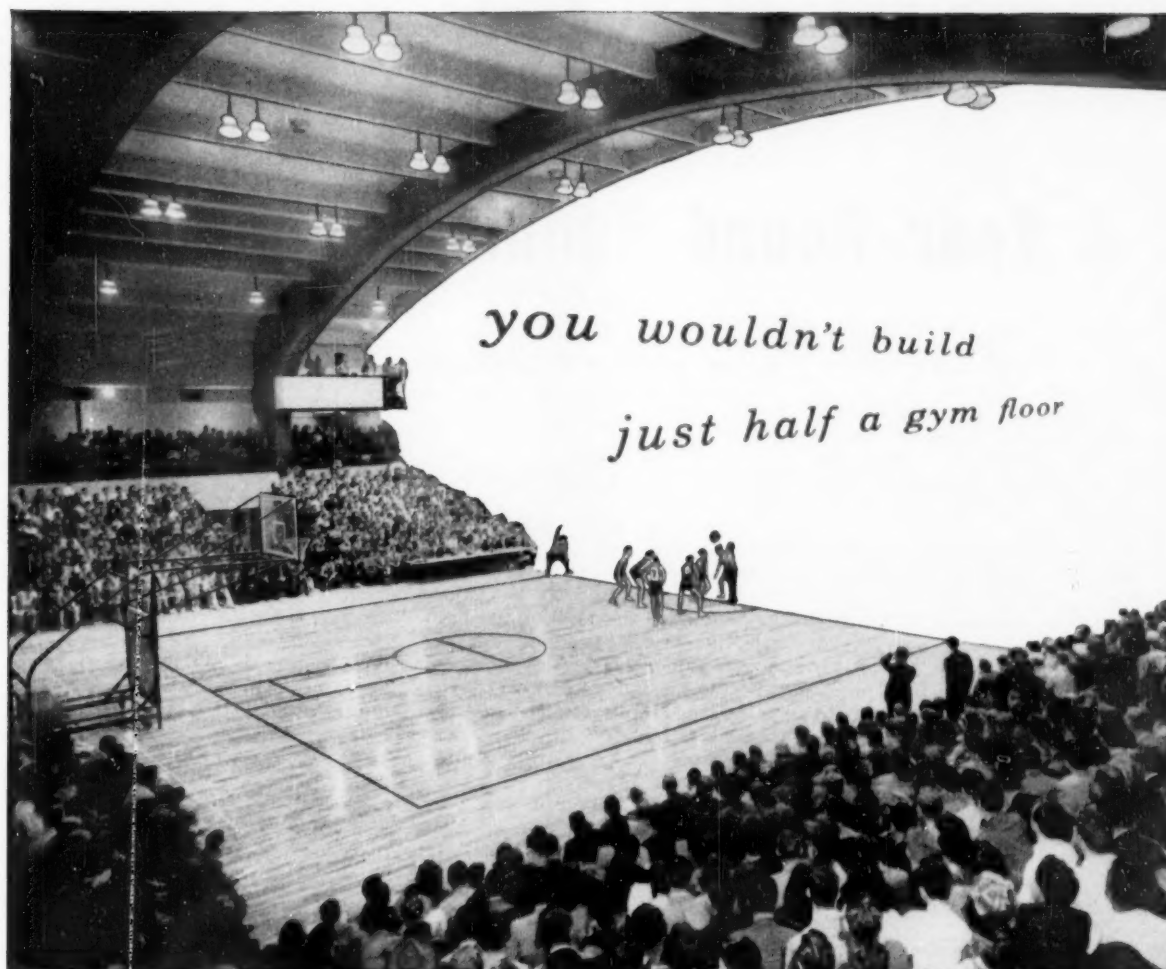
What is the meaning of relaxation in starting and sprinting?

To relax in sprinting means to concentrate nerve impulses within those muscle groups that are positively related to sprint actions, and to withhold stimulation of those muscle groups not so related. Despite the insistence of coaches in all sports upon some such definition, relaxation continues to be interpreted by the ordinary athlete as meaning a less than maximum effort.

In most situations, to relax means to "take it easy." But greatest speed in sprinting can occur only when going "all out," yet in such style as to be perfectly relaxed. See Doherty⁷ on the story of Jesse Owens' greatest day. Despite all the countless pictures of great champions with tight fists and taut tendons in the face and neck, it's still certain that best performances cannot occur when effort is unrestrained and unchanneled.

To a certain extent, this is due to fatigue, even in the 100-yard dash. Several studies (A. V. Hill⁸, Henry¹) have proved that a man's

(Continued on page 36)



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A Year-Round Running Schedule

WITHIN the past couple of years, amazing progress has been made in the development of schoolboy runners. Literally dozens of high school milers have been shading 4:30 and just as many half-milers have been getting below 1:59.

Only the past spring in Massachusetts, three high school quarter-milers broke 50 seconds in a championship meet; while many a schoolboy throughout the land hit 22 seconds or better in the 220.

Since these astonishing performances can hardly be attributed to any new breed of super boy, it's fairly obvious that they must stem from vastly improved training methods. It will hence behoove the wise coach to carefully re-examine his own training procedures, particularly if he's been drifting along with the same methods year after year.

In almost every section of the country, the value of cross-country in the training of the miler and half-miler is conceded, while its possibilities even for the quarter-miler and 220-yard runner are being closely considered.

The contribution of indoor racing is also being widely discussed, and many a coach now admits that indoor track is an important phase in almost every top-notch high school runner's development.

INESCAPABLE CONCLUSION

Certainly, if we may judge by the results obtained by the Finns, the Swedes, and the unbelievable Zatopek, we must concede that year-round running either in competition or in practice is becoming an inescapable requirement for all who hope to challenge the leaders.

Coaches who've watched high school milers doing 4:23, half-milers doing 1:59, and quarter-milers doing 49 seconds—and losing—will recognize the need for both talent and training. But the big question in most of our minds has been: How much cross-country?

By W. HAROLD O'CONNOR

Track Coach, Concord (Mass.) H.S.

How much winter track? How much rest?

I'm one of those coaches who firmly believe that the high school distance runner must have a cross-country background to be among the leaders in the mile or the half-mile, and that he needs it as a base for his indoor 1,000 yards and perhaps for his indoor 600.

One need only reflect upon the training schedules of such great high school milers as Billy Squires of Arlington, Mass., now at Notre Dame; Johnny Kelley of New London, now a varsity sensation at Boston U.; and Don Philpott, last year's indoor mile winner from Montclair, N. J. The conclusion seems inescapable: The miler must tour the hills in the fall.

On the other hand, I'm beginning to wonder whether we American track coaches aren't over-emphasizing over-distance work. If continuous over-distance work actually does build up the stamina we claim for it, it would seem that every marathon runner should do a great deal of his training at distances over 26 miles.

I can assure you that they do no such thing. Having worked for several years with Johnny Kelley, a member of three U.S. Olympic teams, I know definitely that marathoners do almost no over-distance work.

Several other outstanding American road racers agree. Once in a great while, they may go out for about three hours at an easy pace. But most of their work is done at distance far below that of the regular marathon. Indeed, like Kelley, as they grow older, they begin to give more and more attention to training over distances of one, two, three, and five miles.

They know full well that it's the pace that kills, not the distance. They know they can run the necessary distance; their concern is with

being able to sustain the early pace that'll put them up among the leaders. Yet no one can dispute the fact that if there's any race that requires great endurance, it's the marathon.

Perhaps no better example of de-emphasized over-distance training can be found than the regimen of Emil Zatopek, the king of them all. From friends of mine who ran on the American Olympic team, I learned that Zatopek did almost all his training for his great triple win by running quarter miles, literally dozens of them, a day.

If over-distance work were the answer to outstanding performance in the long races, Zatopek should have been covering tremendous distances in preparation for the Olympics. Yet it's claimed that he never covered the full marathon distance until the actual Olympic run! And he won this toughest of all grinds after previously winning two other long, grueling races (5,000 and 10,000 meter runs)!

FOUR-FORTY TRAINING

Is the running of large numbers of 440's the road to success in the mile, cross-country, and even half-mile? I know at least two Eastern college coaches who consistently turn out great distance men, who swear by the 440 route to distance distinction.

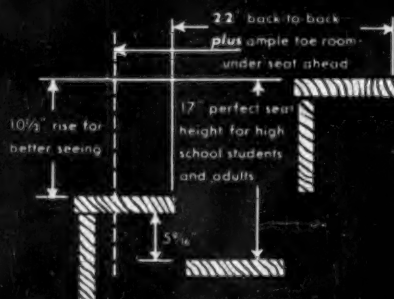
I know another who's had great success in both high school and college, who brings his distance men along with 220's, many of them. Only on rare occasions does he assign over-distance work during the regular season.

He has produced many outstanding college runners, some great before he got them but even greater when he finished with them. As a high school coach, he couldn't hand-pick his material but he turned out the greatest cross-country teams in the country. He's a strong advocate of cross-country in the fall for all his distance and middle distance men, but he concentrates on speed and pace during the rest of the year.

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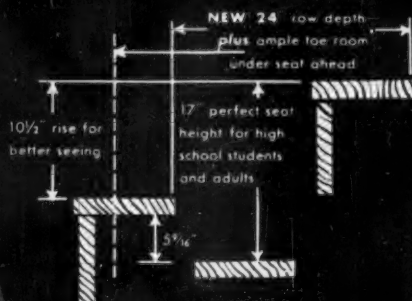
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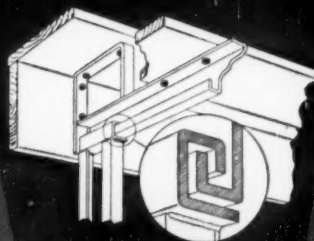
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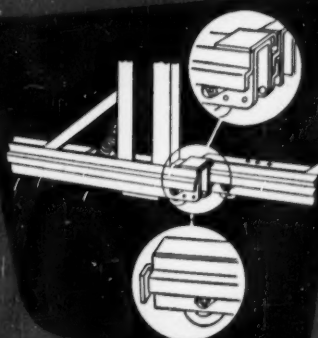
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If you're interested in research, assemble a group of work schedules suggested for training the *average* distance runner. Then take the work schedules from track articles or books by men who have had outstanding stars.

You'll find they all seem to agree that you can't set up a training program applicable to every boy on your squad. In suggesting work-outs for the "average" boy, they're consistent in one thing: They suggest Monday for over-distance work.

Yet among the 12 programs I checked, two college coaches and one high school coach advised over-distance work on Wednesday—this with competition scheduled for the following Saturday. I found that eight coaches recommended over-distance work of one and a half times the racing distance. Four advocated at least twice the full racing distance.

Even the pace suggested for over-distance varied amazingly. Some advocated jogging a couple of miles or more on Monday. Others urged striding the cross-country course easily. Some suggested half-speed striding. Some mentioned striding at three-quarter speed.

It is not my purpose to criticize these coaches, but rather to point out the widely different programs for the "average" runner. Some of us must be wrong, or at any rate some of us must have better training schedules than others.

My own feeling is that a cross-country background in the fall followed by great emphasis on 220's, 300's, and 440's seems like a logical progression for high school distance and middle distance men. Judging from the success of Zatopek, Kelley, and others outstanding in the long races, the emphasis must be more and more on speed, once the runner has built up his body to meet the demands of his event.

In the East, many of us must meet the additional challenge of an indoor season. I consider cross-country a "must" for distance runners who'll compete in the 1,000 yards and in the mile indoors, and that it's advisable for boys who'll compete in the 600 on the boards.

I'm convinced that a boy cannot meet today's fine competition indoors without a backlog of hill-and-dale work in the fall. The training programs of such fine distance men as Fred Wilt, Greg Rice, Gil Dodds, and others indicate their belief in the same theory.

Lack of suitable indoor training facilities has forced me to make constant use of "wind sprints" or "ins-and-outs" to bring along the boys

on my own indoor squads. The success we've enjoyed here in New England and even in the national indoor championships have convinced me that very satisfactory results can be obtained from indoor speed work after outdoor cross-country. I've never yet coached at a school which had its own board track or even ready access to any cage or boards.

Even without a suitable practice area, I like indoor track as the second step in the development of a team. A lay-off from November until April is too big a gap in the training of a runner.

The indoor season offers an opportunity to get very close to the boy as he goes through his work-out. I like to use it to teach boys to relax. Some of them never do, but we can try for a reasonable facsimile. I like to get many of my boys working or playing at hurdling during the winter track season. I know of no other event that can so well loosen back and thigh muscles and smooth out the rough spots in a quarter-miler or middle distance man.

NEED FOR REST

When we consider track on the high school level, we must think of the growing boy's need of rest. Indeed, even our best college coaches might consider the part that a complete lay-off may play in the development of track athletes. If for no other reason than that a boy can become "fed up" with running from September to June without a break, I like to insist upon three or four weeks of complete rest between seasons.

I'm convinced that high school cross-country runners profit from a rest before starting indoor training, and I insist that indoor runners take a break before starting outdoor track.

I also feel it's wise to cut down on both speed and distance work in the final couple of weeks of the outdoor season, especially if the boys have participated in cross-country and indoor track before the outdoor season.

The trainers of thoroughbreds know that a spirited horse can be kept at racing peak only a few weeks. We should apply the same common sense to the even more sensitive racer—the growing boy.

Summing up: It seems to me that we must begin to point our runners toward certain specific races or goals with a program that includes: (1) Distance for backlog, (2) Rest, (3) Indoor speed-work, (4) Rest, and (5) Outdoor speed-work.

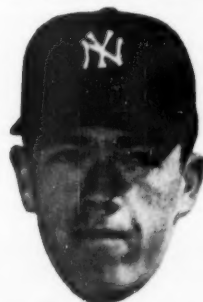
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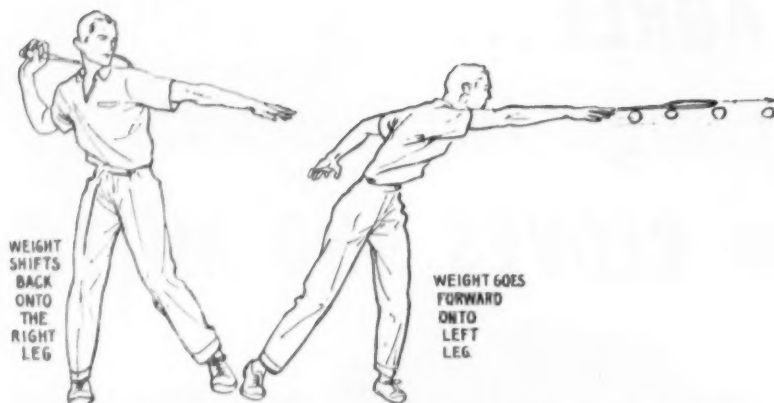


Fig. 1, depicting the ball-throwing action in the full forehand stroke.

Badminton Stroke Production

By KENNETH R. DAVIDSON and LEALAND R. GUSTAVSON

THE most common fault of the beginner is to stand flat-footed and attempt to play a stroke with his body and feet facing squarely to the net. Loss of power and strained muscles result from this stance.

Dependent on which side of the body the shuttle is to be hit, one foot (the left for forehand strokes; the right for backhand strokes) must be advanced so that the body is turned *sideways* to the net.

To insure that maximum power can go forward into the stroke, it is absolutely essential that the body

weight be smoothly transferred forward from the back foot to the front foot. At the moment of impact between shuttle and racket, the body, leaning forward a little toward the shuttle, is perfectly balanced on the front foot, with the toe of the back foot about to leave the floor.

Another important objective in having your weight move forward from the back foot to the front foot when stroking is to enable you to hit the shuttle well ahead of your body.

Not only does the movement of meeting the shuttle as early as

possible provide sounder, cleaner, crisper, and more controlled stroking but it gives your opponent less time to reach your return.

In order to give your opponent even less time to reach your return, you must, in addition to meeting the shuttle as early as possible ahead of your body, also meet it at the highest possible level.

Note: Many players, who otherwise stroke well, lackadaisically let the shuttle come to them, thus allowing it to drop to a lower level, instead of reaching forward to meet the shuttle at the highest possible level. This fault is prevalent throughout their whole game, but noticeably so in the case of receiving low serves and in the stroking of underhand drop-shots.

Obviously, if the shuttle is allowed to drop two to three feet lower than is necessary, then it has the same equivalent distance to climb to go back over the net—thus allowing opponents additional time to reach these dilatory returns.

Meeting the shuttle higher, and nearer the net, introduces another important factor—accuracy. It is simpler and easier to obtain more accurate results when the shuttle has less distance to travel.

If you, as a beginner, understand (and put into practice) the importance of meeting the shuttle as early and as high as possible

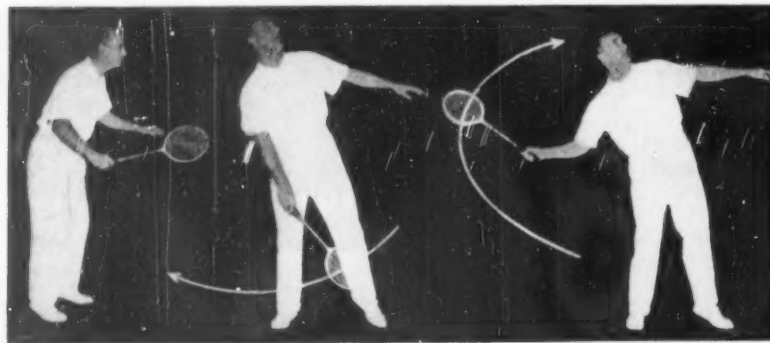


Fig. 2, the long circular backswing for the overhead forehand stroke.



Fig. 3, motion on overhead smash.

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ahead of your body, you have gone far to becoming a fine stroker.

FOREHAND STROKE

Ball-throwing action. The action for a full forehand stroke is similar to throwing a ball. The left side is turned toward the net and the left foot is forward, as the arm, bending fully, brings up the wrist, cocked back, to pause momentarily near the right shoulder.

In Fig. 1, note the way the feet grip the floor, the tension on the knees, the twist at the waist and on up through the shoulders. It is as though you are a spring coiled up waiting to be released at the right moment.

Now, instead of throwing a ball, you "throw" the racket head at the shuttle. Relaxed, deliberate, and deadly accurate, say to yourself, "Ready, aim, fire!" and see to it that your aim is true so that the shuttle goes where you want it to go.

Origin of forehand strokes. Your backswing must be slow, planned, and deliberate. The backswing is important because it places the racket back, as the feet are being placed for the actual stroke, in the correct position for the start of the forward swing. Bring your arm up and cock your wrist back so that the head of the racket touches, or nearly touches, your body between the shoulder blades. This is the "origin" of the forward swing of all forehand strokes.

Although all backswings do not go back this far, the arc formed by the swing would be as though the stroke did start from here.

The quickness of play in the forecourt positions often precludes the making of a full backswing. This is particularly true for play at the net, especially for the lady in mixed doubles.

The forward swing includes the all-important action of hitting the shuttle. The transfer of the body weight from the back foot to the front foot starts the whole forward motion. Thus the body is automati-



Fig. 4, contact in round-the-head.



Fig. 5, finish of round-the-head.

cally leading the way toward the shuttle, with the large muscles of the waist and back lending their strength to the arm as the wrist whips the racket head toward the shuttle.

The follow-through is nothing more than a natural continuation of the stroke. No attempt should be made to stop the stroke at contact—let it stop itself naturally and smoothly. The racket head should be allowed to continue in the direction of the actual shot, thereby assuring a crisp, clean hit. The ending of the stroke has an important bearing in determining the direction of the shuttle.

A free, relaxed follow-through reduces the danger of "tennis-elbow" which may result from the sudden stopping of the forward motion.

OVERHEAD FOREHAND

The backswing for the overhead forehand strokes describes a long circular arc, using the shoulder as the center of the circle (Fig. 2). It is done as the feet are positioning themselves for the stroke. It brings the racket head up behind the shoulder blades, its correct position, ready for the upward forward swing.

From this position, the arm straightens out overhead as the uncoiling of the legs and body add great strength to the over-all forward thrust toward the shuttle.

Fig. 3 shows the full forward motion of the body on an overhead smash. The body, arm, and racket are stretched upward to their utmost in order to meet the shuttle at the highest possible point. The long, smooth follow-through ends well down on the left side of the body.

The follow-through of an overhead clear will not be so long, since much of the power is directed upward rather than downward as in the case of the smash.

An important feature of all overhead strokes is that, though the arm is nearly straightened out, the wrist does not start to "uncock" until the last moment before contact.

The uncocking of the wrist adds the whistling sound which is part and parcel of the hard-hit shot. This wrist action must not be released too early in the forward swing or its power will be wasted. The crucial part of the swing is at the moment of impact.

ROUND-THE-HEAD

A stroke peculiar to badminton, the round-the-head stroke is self-descriptive, being a forehand hitting motion on the left side of the body (the backhand side) as in Figs. 4-5.

It is stroked like any overhead forehand, except that the body bends forward and sideways at the waist and the legs bend at the knees. The left foot is farther to the left

THIS article is reprinted from the superb new text, *Winning Badminton*, by Kenneth R. Davidson and Lealand R. Gustavson (A. S. Barnes and Co., \$3). The book covers the game from A to Z, and is copiously illustrated with more than 120 line drawings and photographs. A detailed review of the book appeared on page 35 of the December issue of *Scholastic Coach*.

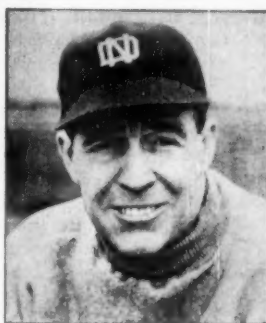
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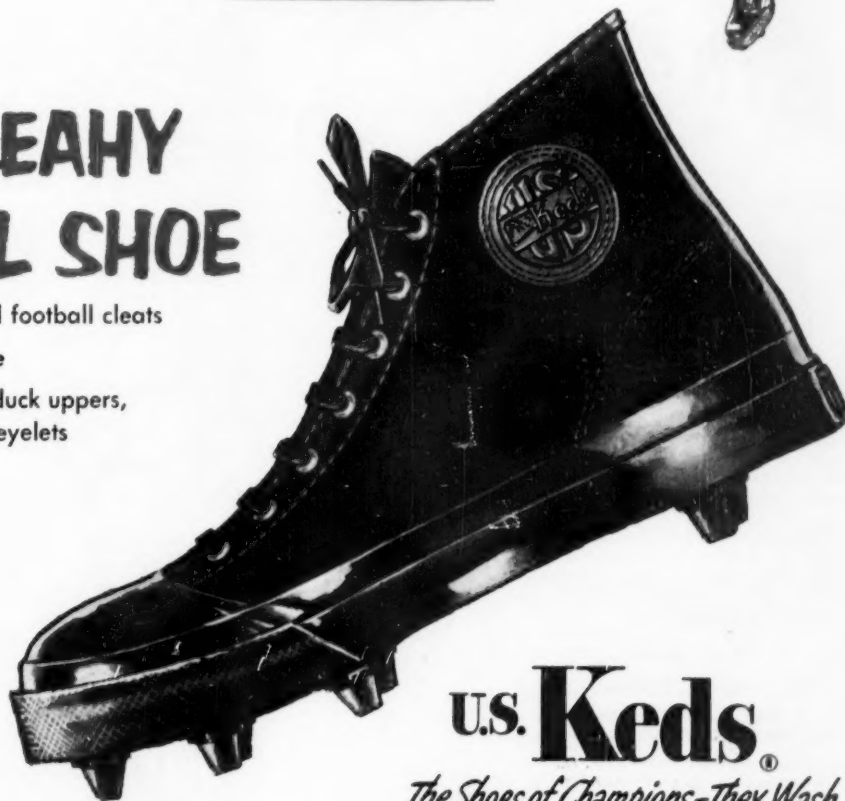
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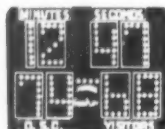
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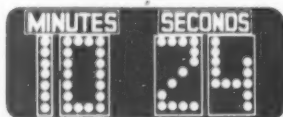


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than on a normal forehand stroked over the right shoulder. The right arm swings the racket back, and then over and around the head to meet the shuttle on the left side of the body.

Care should be taken to see that the weight is well balanced on the left foot. Overswinging, or attempting to reach too far to the left of the body, forces the body to fall away from the net toward the left side line.

BACKHAND STROKE

As on the forehand, the transfer of the body weight from the back foot to the front foot starts the forward motion of the backhand stroke.

Wrist action. Though the wrist can only be bent half as much sideways as it can backward, the slight loss in distance is greatly offset by the extra snap imparted by the pressure of the thumb, which is behind the racket handle.

The backswing. The placing of the racket back into the backswing is completed at the same time as the feet are being positioned for the final stroking step.

In a full swing on any backhand stroke the right hand will always be alongside the left shoulder at the conclusion of the backswing, but the elbow position will vary somewhat, depending on what type of shot is to be played (Fig. 6).

The bending of the elbow is an important part of the backswing. It is never rigid or fully extended in the backswing and it must be bent so that it can aid the wrist in adding power and speed when it straightens in the forward swing.

Elbow action. The elbow bends and acts as a hinge joint, as shown in the illustration. Point your elbow directly at the shuttle:

DOWN—for low shots.

NET HIGH—for drives.

UP—for overhead clears, dropshots, and smashes.

As you start your forward swing, have the feeling that you're going to punch the shuttle with your elbow. Then, as the elbow points directly at the shuttle, straighten it out and allow the wrist to whip the racket forward to hit "into" and "through" the shuttle.

This method permits a smooth elbow action and full utilization of the large muscles which extend the lower arm and add the strength necessary to make an effective backhand stroke.

The vigorous forward punching action of the elbow more or less carries the weight of the body forward from the back foot to the front foot and makes it much more possible to hit a solid blow, which is often necessary, particularly on high, overhead backhand shots from the back court.

(Note: Most players having difficulty on overhead backhand shots from deep in court brace their body weight on their back foot and fail to transfer their weight forward.)

The follow-through. There should be no attempt to stop the racket at contact. Allow your racket to continue forward in a long, flat arc, thereby giving the racket head a better chance to meet the shuttle squarely. During a full, free follow-through, your wrist will rotate and roll over slightly, turning the palm of the hand sideways.

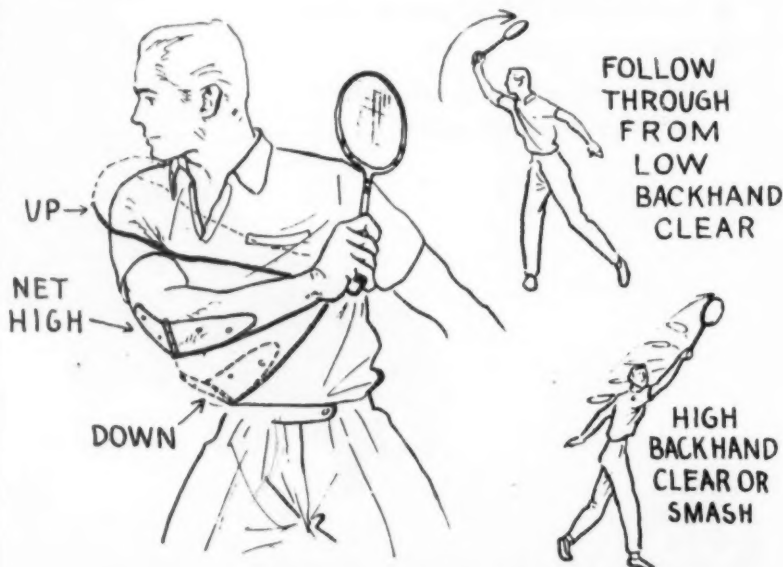


Fig 6, the conclusion of the backswing in the backhand stroke.

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Indoor Olympics for Gym Classes

By **GEORGE F. STAGG**

Track Coach, Forsyth (Mont.) H.S.

WHILE track is one of the most interesting of sports and is probably the most soul-satisfying to the successful athlete, it remains something of a mystery to the incoming high school freshman.

In order to stimulate interest and also to gain some insight into future prospects, I run an annual indoor olympics. The event consists of 10 different contests run off over a period of about five physical education classes.

Here at Forsyth, all freshman and sophomore boys are required to take physical education unless excused for medical reasons. Classes generally run between 25 and 35 boys.

Three captains and assistant captains are chosen by the boys and they in turn choose teams. Each team consists of eight to 10 boys, who select the name of some nation for their team name. Our Olympiad is now ready to get under way.

As I mentioned, our meet is made up of 10 separate events which are chosen with an eye to the equipment limitations present in all smaller high schools. Following is a list of the essential equipment needed for our 10 events: 1 relay baton, 1 stop watch, 1 measuring tape, 2 basketballs, 1 softball, 1 set of high jump standards, 1 cross-bar, 2 mats.

Most schools either have or can improvise or elaborate on this list.

Two events are run off at each meeting of the class, and can be paired up according to local convenience and facilities. Following is a list of the 10 events that are used:

1. One-lap sprint.
2. Five-lap run.
3. Basketball throw for distance.
4. Basketball throw for accuracy.
5. Left hand softball throw.

6. High jump.
7. Standing broad jump.
8. Free throws.
9. Four-lap relay.
10. Medley relay.

The one-lap sprint is around the basketball court, with the boys being permitted to cut corners rather than make right angle turns. In our case, the distance is approximately 75 to 80 yards. It's generally a wise precautionary measure to remind the boys to finish at full speed or you will note a marked tendency to slow up five yards before the finish line. Boys run one at a time and each is timed.

This is also done in the five-lap run, which is about 375 to 400 yards in length and is conducted in the same manner as the one-lap sprint.

The basketball throw for distance is conducted either individually or in groups. Each boy is allowed three trials, the best of which counts. The ball is thrown two-handed, backwards over the head of the thrower. A foul is called if the thrower crosses the scratch line.

In the basketball throw for accuracy, the target is the center circle of the basketball court. Varying points are given for throwing the ball into the jump circle, hitting the line of the jump circle, throwing the ball into the restraining circle, or hitting the restraining line. Points are awarded 20—15—10—5 respectively.

Each boy is given six trials and he may throw the ball in any manner he chooses from behind the free-throw line or any other line you might choose. The contestant's score is figured by totalling the results of his six trials.

The left hand throw (for right-handed boys) is run off in similar fashion to the basketball throw for distance; i.e., each boy gets three

trials, the best of which counts, and a foul is called if the scratch line is crossed.

The high jump will probably be one of the highlights of your meet. The forms used will be many and varied, the interest high, and the enjoyment great. I usually start the bar at 2' 6" and raise it two inches at a time until about five contestants are left, at which time I raise it one inch per round. As in a regular meet, each boy is allowed three trials at each height.

The standing broad jump is conducted either from the floor or from a three-inch jumping platform behind a scratch line. Each boy must take off and land on both feet.

Each boy is allowed 15 tosses in the free-throw event, with his score based on the number of successful attempts.

I usually like to save the two relays for the wind-up. The four-lap relay consists of a four-man team with each member running one lap. The medley relay, also four men to a team, consists of one, three, five and seven lap legs.

In scoring the Olympics, I use a system partially based on the method of scoring cross-country meets and partially on the method used in scoring the decathlon, plus a few innovations of my own.

Either a set point value per performance chart can be worked out or a simpler system in which the top score in each event scores 100 points with the points scaled down as follows:

One lap	minus 3 for every .1 s.
Five laps	minus 1 for every .2 s.
Four-lap relay	minus 5 for every .1 s.
Medley relay	minus 1 for every .1 s.
Basketball distance	minus 1 every 4"
High jump	minus 3 every in.
Softball throw	minus 2 every ft.
Broad jump	minus 2 each in.
Free throws	minus 10 each one missed over the best record.
Basketball accuracy	subtract the difference between actual score and best score from 100.

Most of the events are run off, scored, and judged by the captains. The team totals are based on the performance of the five best individuals in each event for each team. The purpose of this is four-fold:

1. It eliminates the adjustments that would be necessary due to the teams having uneven numbers.
2. No adjustment is necessary in the case of absences.
3. Additional incentive is present in wanting to make the top five of one's own team.
4. It tends to equalize teams by not penalizing a team for members who are slow or lacking in the various abilities.

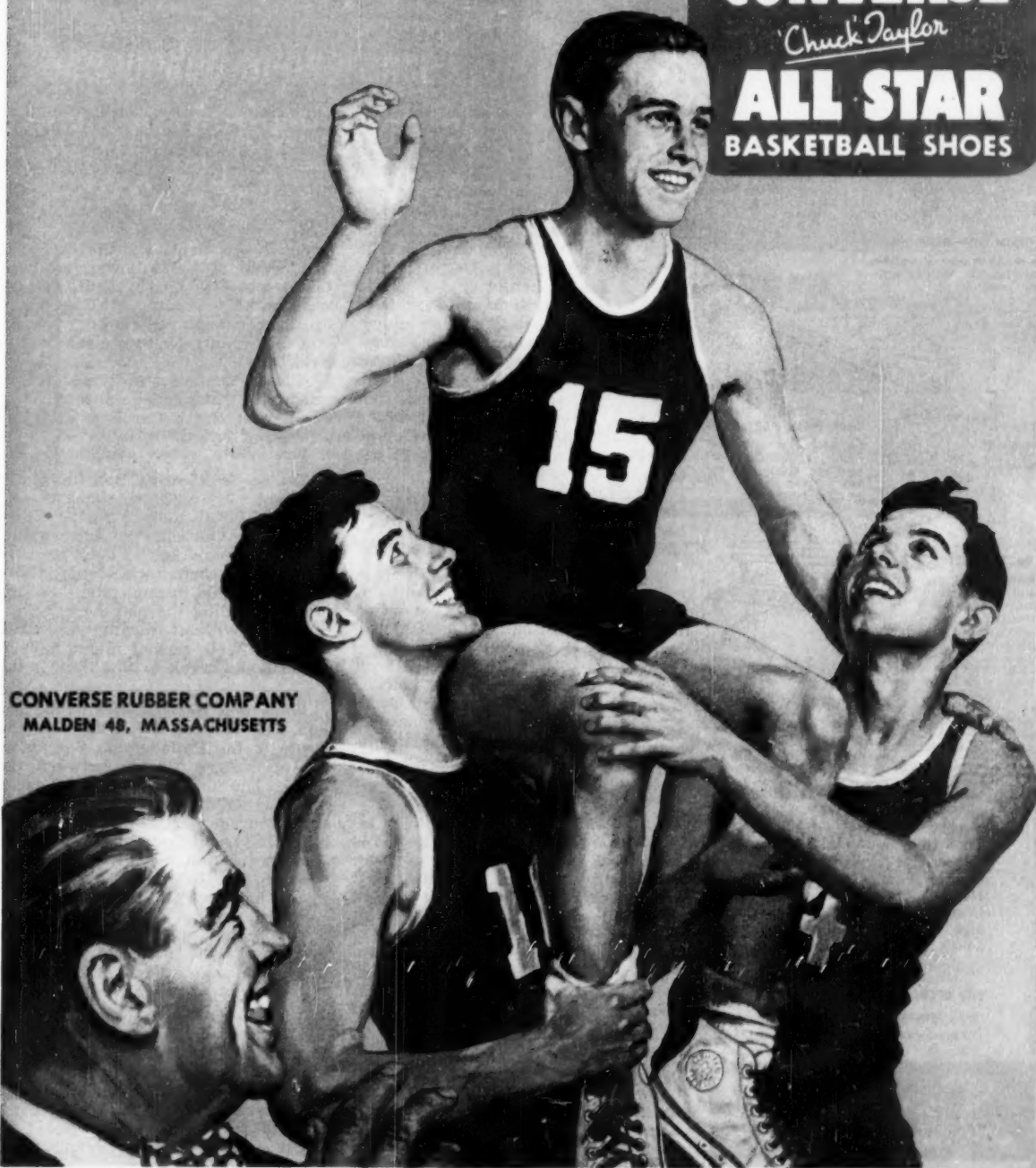
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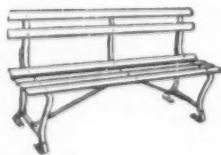
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TINY Bobbie Cahn was one of the finest and most colorful officials in pro football annals. He took an intense pleasure in squelching George Halas. One afternoon in Detroit, Halas and the Lions' mentor, Patsy Clark, attempted to play hide and seek with him. They kept sneaking up and down the field, hiding behind the light towers while flashing instructions to their squads.

Bobbie, noticing these childish shenanigans, called for time. Motioning with his arms, he summoned George and Patsy from out of hiding to the center of the field.

"Dr. Livingston," he said, "meet Mr. Stanley. And now get the hell back to the bench. From now on, you get 15 yards every time you move!"

In the course of the 1941 championship play-off between the Giants and the Bears, Ben Sohn, a Giant guard, had his jersey ripped off his back. Out charged Coach Steve Owen with a claim of holding. But the officials turned a deaf ear to his protest. Owen glared at them balefully.

"Maybe I was wrong," he grumbled. "I guess the Bears didn't hold Sohn and rip his shirt off. It must have been moths."

When the Giants faced the Redskins in 1942, it was Owen's turn to gloat. The Giants beat the Redskins, 14-7, without making a first down! In fact, they chalked up exactly one yard by rushing!

"One yard!" sobbed George Marshall, the Redskin owner. "By God, I can make more yardage than that just by falling down!"

In the heyday of the Yankees' Murderers Row, Koenig once led off an inning with a triple to right. Lazzeri scored him with a line double to left. Then Ruth and Gehrig smote terrific homers. That brought up Dugan, who shortened up and laid down a perfect

bunt single. Manager Miller Huggins came storming out of the dugout. "Idiot!" he bellowed, "I ought to fine you a hundred bucks for breaking up a rally!"

After the 1949 football thriller between Notre Dame and North Carolina, some of the followers of both teams met in a nearby grill. A Tarheel fan kept shouting, "If Choo-Choo Justice coulda played our boys woulda run those Notre Dammers cleah off the field."

A Notre Dame rooter looked at him scornfully. "Mister," he sneered, "we could beat North Carolina with our Protestant squad."

The barber shearing Bob Hardy, U. of Kentucky quarterback, was unaware of his customer's identity. Discussing the Kentucky-Villanova game, the barber remarked, "I don't see why that dumb quarterback, Hardy, didn't shoot Paolone through the line instead of calling the play he did."

Hardy, without turning his head, replied, "Well, now, I might have if I had had a week to think about it."

When that tremendous all-time pro end, Bill Hewitt, was traded by the Bears to the Philadelphia Eagles, he set up a keen rivalry between the clubs. The first time Hewitt faced his old mates, the Bears attempted to discourage him as quickly as possible. They sent three blockers against him on the first play. Hewitt hit the ground, but bounced right up and again and scornfully surveyed the prone Bears.

"Three men on one end!" he sneered. "What's the matter? Haven't you any confidence in yourselves?"

Mel Ott came up to the Giants at the tender age of 16. He was a catcher, but the club was loaded with backstops. What Manager John McGraw needed was an outfielder. He asked the 16-year-old Ott, "Ever play in the outfield?"

Ott seriously replied, "Yes sir, when I was a kid."

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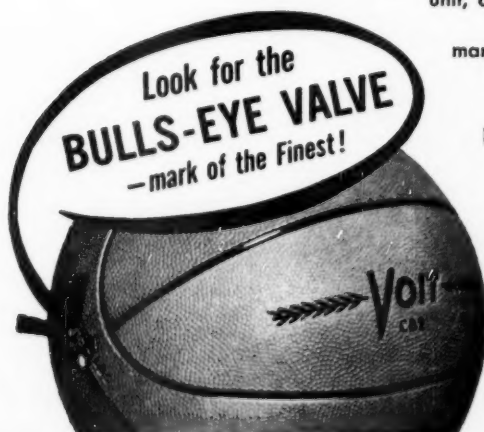
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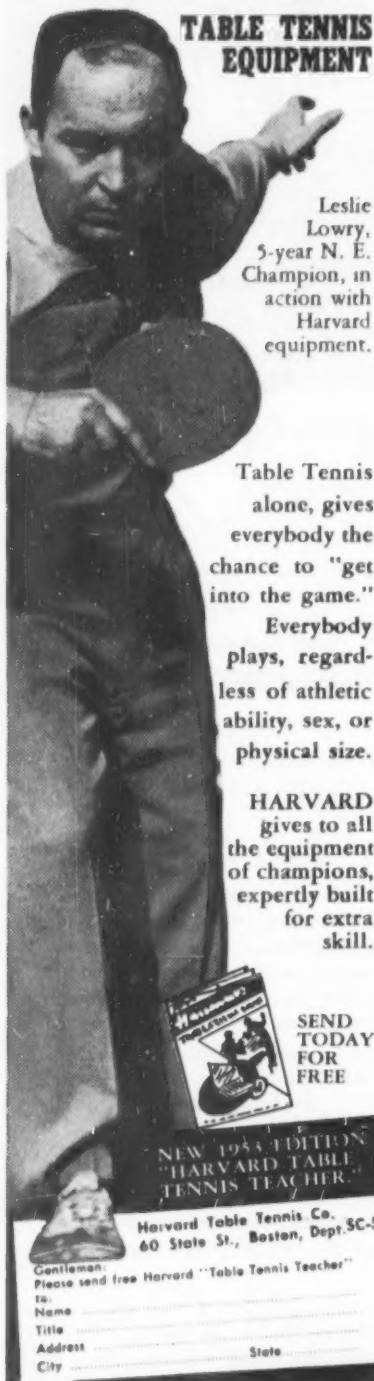


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Playing in a twosome, the great Ben Hogan was in an expansive mood. He had just finished holing out on a short 135-yard hole when a ball came sailing over the slight knoll on which the green was located and rolled within three feet of the cup.

Hogan thought he'd have some fun. "Let's give this fellow the thrill of his lifetime," he said to his partner—and tapped the ball into the cup.

Moments later, a player hustled over the knoll and looked around in puzzlement. He then walked up to the cup and looked down. His face lit up like a Christmas tree.

"Joey! Joey!" he yelled. "I made it in SIX!"

For weird triple plays, there's the one that occurred in the semi-finals of the 1953 Minnesota state tournament. Austin was leading Eveleth, 8-0, in the last half of the seventh. Eveleth put men on first and second, with nobody out. The next batter drove a fly to deep left, which was caught. As the runner on second moved to third, the man on first tried for second and was thrown out. The Austin bench then hollered for the ball to be thrown to second—and the first runner was called out for leaving the base too soon! (Relayed by Austin's coach, Richard Seitz.)

That Niagara-Siena three-hour and 10-minute classic featuring six overtime periods which we mentioned last month was nearly duplicated this season at Olympia, Wash., when St. Martin College beat Seattle Pacific College, 112-104, in five overtime periods.

The score was tied at the end of the first quarter, 15-15; third quarter, 51-51; end of game, 68-68; and at the end of the first four overtimes (78-78, 84-84, 93-93, and 101-101). The weary whistle tooters (were they paid time and a half for overtime?) were Ed Stricherz of Enumclaw and Lloyd Seagle of Olympia.

The past football season sure was a tough one on winning streaks. The two most respectable skeins in college ball (Michigan State's and Georgia Tech's) were shattered, while three of the country's longest schoolboy streaks were broken.

After chalking up 51 in a row, Sikeston (Mo.) H.S. dropped a heart-breaking 14-13 decision to Poplar Bluff—a fumble on P.B.'s four-yard line in the closing minutes costing them a great chance for victory. Sikeston didn't lose another game all season and now has a sensational six-year record of 56 and 1!

Morenci (Mich.) H.S. took it on the chin, 7-0, from Clinton H.S. while seeking its 49th straight; and Bolivar (N.Y.) had its gorgeous 37-game streak broken in its very first game, Wellsville H.S. doing the disrupting, 7-0.

We still don't know what happened to that 39 game streak that Willow Springs (Mo.) H.S. brought into the 1953 season.

Way we figure it, Hal Cummings of Clermont (Fla.) High must be a pretty fair fullback. He reeled off 12 touchdowns in his team's 83-14 victory over St. James of Orlando! Assuming it was a 32-minute game, that means he averaged a touchdown about every three minutes! We're out of breath thinking of all that running.

Wonder if Notre Dame scouts are seeking that hotshot quarterback at Campion High in Prairie Du Chien, Wisc. Last report we had on him was when he scored twice, passed for the other three touchdowns, and kicked all five extra points in Campion's 35-9 pasting of Austin, Minn. Oh yes, his name. Frank Leahy, Jr.!

Where in America would a high school boy have a chance to play baseball against a major league team? Tsuneyuki Shimada, 18-year-old senior at Saga High in Kyushu, Japan, had such a chance. He played for a Japanese all-star team against the touring New York Giants. What's more, one afternoon he singled home the winning run off Hoyt Wilhelm!

Clean-Up Campaign: A bar of soap, any size or color, was the admission charge for a volleyball and three basketball games at the Rocky Ford (Colo.) fieldhouse on a recent Saturday night.

Guests? Yes! Competitors? Yes! Enemies? NO!

SCHOOL leaders are making a real effort to develop good sportsmanship. One of our schools prepares and prints a 4" by 6" card requesting the cooperation of spectators in the matter of good sportsmanship. A copy is given to each fan as he enters the gym. On it printed in large, easily read type is the following:

1. Treat opponents and officials as guests.
2. Cheer freely and loudly, but orderly.
3. Never boo officials' decisions.
4. Help keep the court free of objects.
5. Remain quiet while either team is attempting a free throw.
6. Help us keep this a game; we are opponents, not enemies.
7. Do not stamp feet or beat on bleachers.

Any staff of principals, coaches, and teachers can control the situation and insure good sportsmanship provided they're willing to work at it constantly and are, themselves, courteous to officials and visitors.

(Prepared by Secretary LaFayette Golden for the Florida H.S.A.A. Bulletin.)

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The Pre-Game Meal

THE pre-game meal plays a vital role in the preparation for a winning effort, and it will behoove the coach to familiarize himself with its physiological and nutritional implications.

The first question that arises is *when* the meal should be eaten. Most experts agree that it should be taken from three to five hours before game time. The specific factors¹ which govern the time-interval include:

1. Efficiency of athlete's digestive system.
2. The rapidity with which he can digest the specific foods.
3. The extent of his emotional tension.

The second question is *how much* should be eaten. Though some coaches want their boys "lean and hungry" at the opening whistle, most of the better trainers believe in giving the boys just enough of the proper foods to take the edge off their appetites.

That leaves the \$64 question: *What foods* are particularly desirable? Broadly, you want foods that:

1. Cause the least possible strain on the digestive system.
2. Are quickly assimilated and easily utilized.
3. Leave an alkaline residue upon oxidation.
4. Contain a maximum amount of energy-rich carbohydrate.

Insofar as *specific foods* are concerned, there is a wide diversity of opinion. To determine what sort of basic pattern is observed, let's take a look at the practices of some of the country's outstanding trainers and coaches.

For the football team, Maryland's Jim Tatum and Warren Giese¹ assert that a meal of moderate proportions, rich in carbohydrates and devoid of fried or fatty foods will prove sufficient four hours prior to the game. Approximately two hours before game time, they recommend a glass of orange juice with several tablespoons of honey as a "beefed-up" source of energy-rich carbohydrate material.

In basketball, Trainer Laurence Morgan² of Kansas State stresses a good substantial breakfast every day and a good lunch on game days. The pre-game meal is taken at 5 P.M. and consists simply of tea, melba toast, and a half peach. A post-game meal of more ample proportions is also prescribed, and includes

ice cream or a dry cereal, milk, and two sandwiches, usually roast beef.

At U.C.L.A., Trainer Elvin Drake² tries to feed the basketball players at 3:30 (when the game is scheduled for 8:00) so that the boys can finish eating four hours before the opening jump. The boys are fed melba toast, hearts of celery, steak, a small baked potato, green beans, and a fruit cup.

For track, Bresnahan and Tuttle³ recommend a luncheon three hours prior to afternoon competition. They offer two possible menus, one low in caloric value and the other higher in caloric value.

At any rate, the light luncheon is a 560-calorie deal embracing fruit sauce or fruit juice (one glass of orange juice), 80 cal.; three slices of toast with two patties of butter (2/3 oz.), 390 cal.; and tea with one tablespoon of sugar, 90 cal.

The heavier luncheon is an 850-calorie package, involving: a half portion of cereal with 1 oz. of cream and 1/2 tablespoon sugar, 110 cal.; two slices of toast with two patties of butter (2/3 oz.), 310 cal.; two broiled lamb chops, well-done (3 1/2 oz.), 310 cal.; and tea or hot water with 1 oz. of cream and 1 tablespoon sugar, 120 cal.

Umbach and Johnson⁴ observe the same pattern in offering two typical menus that wrestlers might subscribe to from three to five hours before match time.

The heavy pre-game meal includes canned sweetened fruit salad, small steak or lamb chop, baked potato, green peas, lettuce and tomato salad, toast with honey, sweetened tea. The lighter meal consists of orange juice sweetened with sugar or honey, soft boiled eggs, toast and honey.

In baseball, the pre-game meal problem isn't quite as acute. Iowa's coach, Otto Vogel⁵, plans a heavy breakfast and a light luncheon. A former big leaguer himself, he points out that many professional players have only a sandwich and a glass of milk, while others prefer to eat a heavy combination breakfast and luncheon four or five hours before game time.

From all these suggestions by different coaches in different sports, several clearcut ideas emerge: (1) The meal should be light. (2) It should be eaten from three to five hours before game time. (3) It should consist of energy-rich, easily digestible foods.

The most popular items in the pre-game menu appear to be toast, honey, fruit juice, baked potato.



¹Tatum, James M. and Giese, Warren K.: *Coaching Football and the Split T Formation*, Wm. C. Brown Co., Dubuque, Ia., 1953.

²The First Aider, January (2), 1953, The Cramer Chemical Co.

³Bresnahan, George T. and Tuttle, W. W.: *Track and Field Athletics*, C. V. Mosby Co., St. Louis, 1950.

⁴Umbach, Arnold W. and Johnson, Warren R.: *Successful Wrestling*, C. V. Mosby Co., St. Louis, 1953.

⁵Vogel, O. H.: *Ins and Outs of Baseball*, C. V. Mosby Co., St. Louis, 1952.

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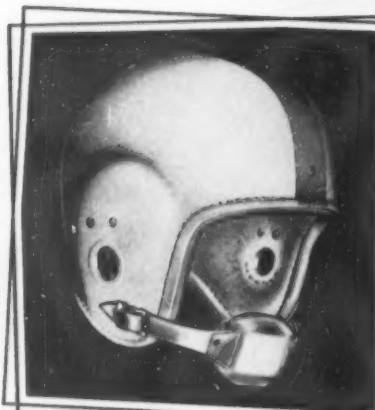
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Sprint Starting

(Continued from page 16)

maximum speed begins to lessen after only about 60 yards, primarily because of various internal and external resistances, but also because of the accumulation of fatigue effects which do slow muscle action.

However, these fatigue effects which slow the sprinting muscles are probably not as effective in the short dashes as are the dis-coordinations of movement that come from indiscriminate "all-out" effort. Tense muscles in the arms and neck produce a high head and a more vertical running angle which make effort less effective.

Space does not permit a longer discussion. In conclusion, sprinters must practice at top speeds constantly, yet never in such fashion as to tighten unrelated muscles. To run relaxed should not mean to run slower, but rather to run easier. To run easier is, in this sense, essential to running fastest.

Where should attention be focussed during the "set" position?

The answer, based upon many scientific studies, is certain: Attention should be concentrated upon the forthcoming action and not upon the sound stimulus. Trow⁹ summarizes such studies by stating that the average reaction time in various motor situations when attending to a sound stimulus is 0.225 second, but when attending to the forthcoming motor response, only 0.120 second, a difference of a full 0.1 second.

Other studies (Henry⁵) vary from these exact figures, but all differences favor attention upon the response. These facts illustrate the error of depending upon simple observation and opinion for one's coaching methods. The results of such experiments have been known for over a quarter century, yet coaches still vary their methods in this regard.

For example, in an article of wide influence through his world record performances, Patton¹⁰ stated, "I've always felt that the runner should be thinking about the gun—thinking when the gun will fire, but not moving until the report is actually heard." Either Patton did not actually focus attention as he now thinks he did (we're all guilty of this error from time to time) or he might have improved his :09.3 record for the 100.

The only real uncertainty as to the best focus of attention lies in the

exact meaning of the statement, "attention should be concentrated upon the forthcoming action." Canham³ writes, "Best results are gained by keeping the back leg relaxed and bringing it through fast and low, concentrating upon the powerful drive off the lead leg."

No studies are available on this point and Canham may be exactly correct. Yet other possibilities do exist which might be even more effective. Lacking specific data, the important point to emphasize here is that concentration of attention upon the motor response should mean a pin-pointing of attention upon a specific and simple action.

With endless drill, this concentration becomes as the psychologists write, "automatized." The well-trained sprinter often describes his mental state at the start as a "complete blank." And he's right in part; for certainly he's not *thinking* about anything in particular. He has no thoughts as such, for thoughts would imply a wandering and would lead away from action rather than into it.

Yet in a very real and important sense, impossible to put adequately into words, but known to every trained sprinter, he does concentrate himself, his muscles, his mind, his feelings, in terms of specific explosive action. Consciously, neither the starter nor his gun nor even its sound exist for him. Rather his mind and body are "set" in terms of movement—a "set" from which only the sound of the gun should release him.

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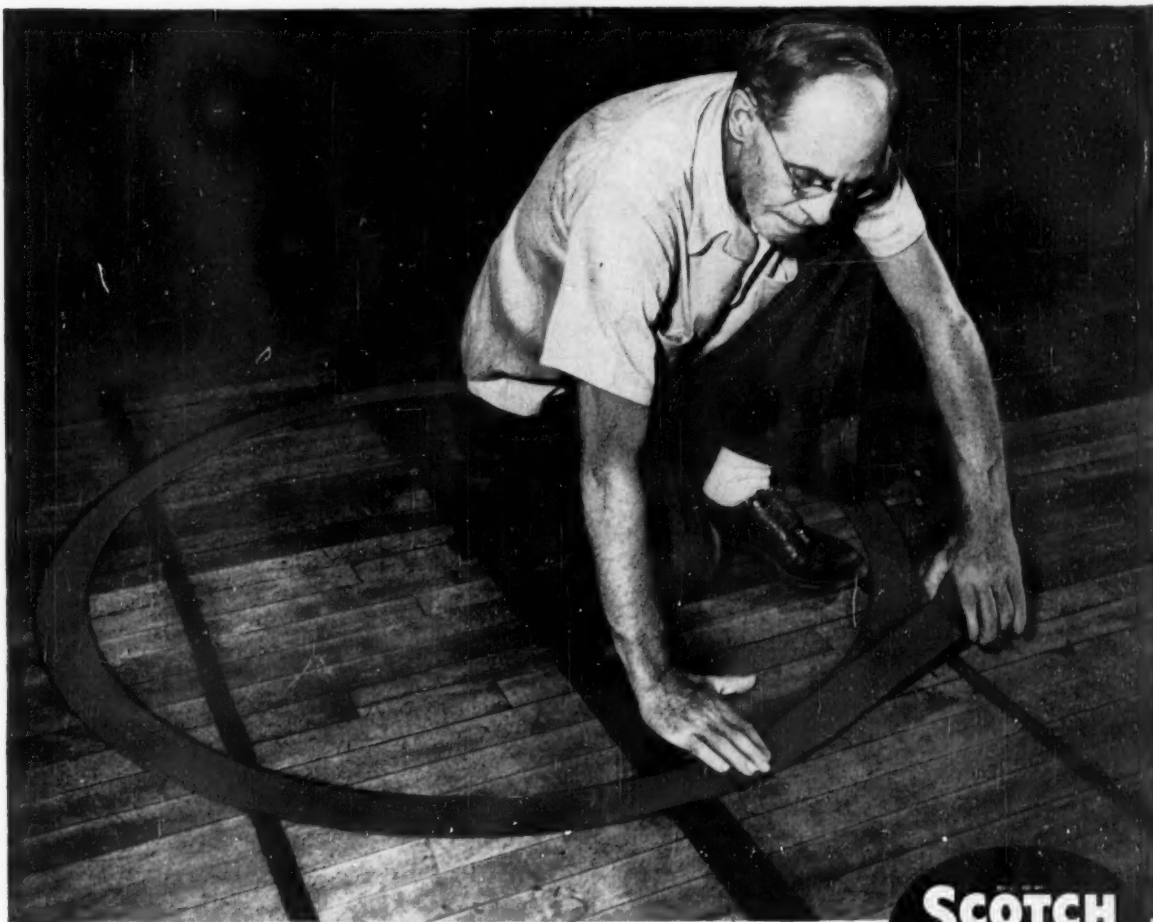
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WRITE FOR LITERATURE



Shot Putting Horizons

(Continued from page 9)

1953 is even more revealing.

During a tour of Europe, where we were competing every other day and very often every day and traveling at night, Parry would continue to work long after the meet was over. I'll never forget towns like Oslo or Stockholm where we stood in the rain and dark while Parry put time after time to work out something that had not been just right in competition.

This extreme devotion and enthusiasm after nine hard months of practice and meets, plus a six-week tour of Europe, was truly remarkable. How much time will the next record holder have to devote to the event?

The results of the teaching done by Fonville, Fuchs, and O'Brien become more evident every day. In 1953, for instance, no less than three other college athletes besides O'Brien had puts of better than 55' 6"—Darrow Hooper of Texas A. & M. (56' 4 1/4"), Fritz Nilsson of the University of Michigan (55' 9 3/8"), and Tom Jones of Miami (55' 7 3/4"). In addition, 14 other Americans put better than 52'. It's truly been one of the best years ever for shot putting in this country.

To delve into the multitude of details that characterize the recent progress in the shot is impossible. Yet it's essential to point out the salient features of form in order to present a reasonably clear picture for coaches and athletes. Form or style has changed and still is changing, and we must assume that this is one reason for our present high level in the event. Analysis, then, is necessary.

The contribution that Fuchs made, namely, a more powerful putting position without sacrificing speed, is the basis of the present form trend in shot putting. While O'Brien, Hooper, Nilsson, and others have made innovations of their own, the basic principles upon which their puts are based are the ones Fuchs brought to the attention of the track world.

To understand the analysis of any event, we must first understand principles. So let's take a look at the fundamentals upon which the Fuchs, O'Brien, Hooper style of shot putting are based.

While body position in the rear of the circle varies a great deal, this form emphasizes an exaggerated lean

At the tender coaching age of 34, Don Canham is one of the most respected track mentors in the land. A steady Scholastic Coach contributor, he's authored three books for A. S. Barnes and Co. (Track Techniques Illustrated, Field Techniques Illustrated, and Cross-Country Illustrated). What does he know about shot putting? Brother, look at the record: Since 1949, Michigan has produced five putters who've bettered 50'. Two of these have gone over 55' and another hit 53'.

to the rear of the circle. The shot is thus a maximum distance from the toe board and obviously with proper form can gain more momentum over the longer distance it must travel.

This conscious sideward and backward bend which completely stretches the muscles of the left side of the body, not only keeps the right hip back in a closed position but also puts the strong putting muscles of the left side and back in an extended position, which, is, of course, most powerful.

Getting into this position at the rear, and not waiting until the center of the circle is reached, prevents any pause while "slack" is taken up by cocking.

Hooper and O'Brien went even farther than Fuchs by facing more to the rear of the circle and almost planting the right foot at a right angle to the toe board when they start across.

The feeling here is that with a foot planted in this manner, the athlete will keep the right hip back in a tucked position to a greater degree during the important initial stages of the glide or hop.

In addition, the exponents of this form usually land in the center of the circle with the foot planted almost directly backward, and thus no alteration is necessary as the athlete moves from the rear to the center.

Despite the initial leaning away from the toe board, exponents of the form (as have most other great shot putters regardless of style) start the movement across the circle by dropping the hips down and forward toward the toe board.

(Continued on page 50)

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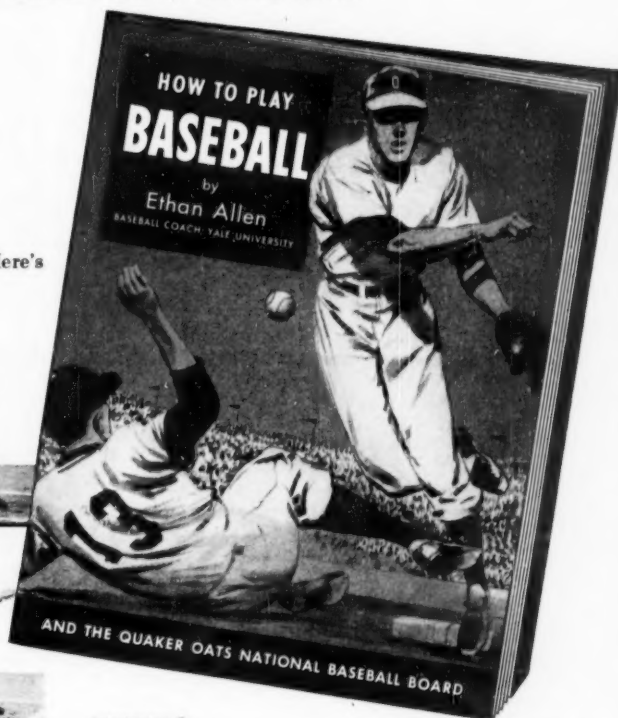
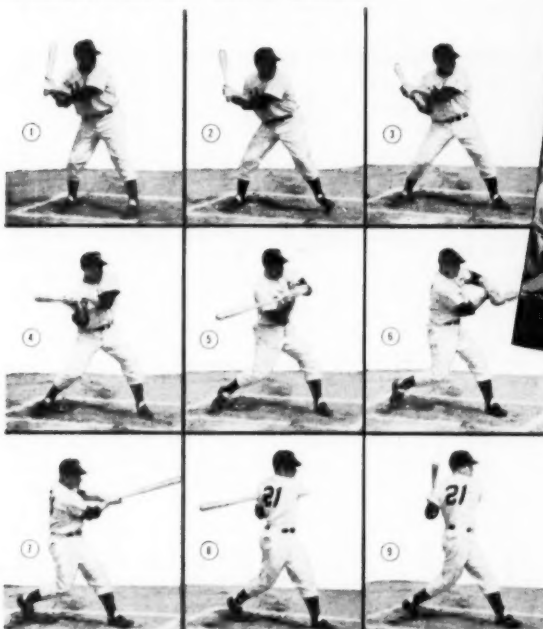
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Donald Karr (Tilghman) Paducah, Ky.	6.1	190	Ralph McRight
William Melnik (Brooklyn Tech) N. Y.	6.3½	218	Adam Cirillo
Wade Patterson (Moscow) Idaho	6.1	205	Jim Hammond
Thomas Peters (Glenbard) Glen Ellyn, Ill.	6.2	185	Don Fortunato
Naseby Rhinehart (Missoula) Mont.	6.	175	Hal Sherbeck
Frank Rigney (East St. Louis) Ill.	6.3	227	Wirt Downing
Charles Sample (Iowa City) Iowa	6.2	184	Frank Bates
Robert Schmidt (Rochester) Minn.	6.3	205	Loren Hagge
Donald Stiller (Shawnee) Okla.	6.3	200	Paul Greene
Charles Zawacki (Uniontown) Pa.	6.2	189	Bill Power

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Frank Bloomquist (East Waterloo) Iowa	6.1	200	Lou Breitbach
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Joseph Galdi (Passaic) N. J.	6.3	215	Manlio Boverini
Alex Karras (Emerson) Gary, Ind.	6.1	225	Art Ralfe
Benton Ladd (Capital Hill) Okla. City, Okla.	6.1	220	C. B. Speegle
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Donald Graham (Aberdeen) Wash.	5.11	177	Norman Newman
George Fuson (Cheyenne) Wyo.	5.9	164	Don Creese
Charles Havens Jr. (Westminster) Md.	5.11	175	Hubert Ruby
John Pendexter (Lyons) LaGrange, Ill.	6.2	180	Charles H. Bennett
Stuart Perry (Little Rock) Ark.	6.1	187	Wilson Matthews
Dennis Rust (Ames) Iowa	6.3	200	Kenneth P. Wells
Kenneth Sargent (North Quincy) Mass.	5.10	182	Jack Donahue

CENTERS (LINEBACKERS)

Hal Duffy (Central Catholic) Portland, Ore.	6.4	221	Harry Scarff
Al Francis (Bellarmine) San Jose, Calif.	6.	220	John Hanna

Coach

Paul Haushill (Harding) Bridgeport, Conn.	5.11	205	Stan Miska
James Jones (Greensboro) N. C.	6.1	185	Robt. B. Jamieson
William Kerr (Steubenville) Ohio	5.10	190	Ray Heyman
William Lord (Mandan) N. D.	6.	185	Johnny Mach
William VanBuren (Lorain) Ohio	5.11	200	Art Lave

QUARTERBACKS

Ray Brown (Greenville) Miss.	6.1	180	Carl Maddox
Art De Stefano (Newton) Mass.	6.1	183	Bud Hawkes
Don Hawkins (Portageville) Mo.	5.10	165	Vic Reeves
Jack Henkel (Eugene) Ore.	5.9	174	Lloyd Amick
Jim Ninowski (Pershing) Detroit, Mich.	6.	195	Mike Haddad
Buddy Sasser (Conway) S. C.	5.11	150	Bob Clark
Carl Schlemeyer (Odessa) Tex.	6.3	174	Cooper Robbins
Ernie Zampese (Santa Barbara) Calif.	5.8	155	Louis Tsoutsouvas

TAILBACKS

Roger Adams (Millard) Fillmore, Utah	6.1	155	Taft Watts
Norman Anderson (St. James) Minn.	6.	175	Ken Swanson
Ken Aycock (No. Phoenix) Ariz.	6.	175	Cecil Coleman
Jackie Douglas (Santa Monica) Calif.	5.9	155	Bob Stillwell
Walter Fondren (Lamar) Houston, Tex.	5.11	160	Bob Schulze
Ray LeRoux (East Green Bay, Wisc.	5.10	170	Al Reed
C. R. Roberts (Oceanside) Calif.	6.1	195	John Simcox

HALFBACKS

Pat Cvengros (Ironwood) Mich.	6.1	205	Americo Mortorelli
Alvin Harrington (Punahou) Honolulu	5.11	185	John Gaffrey
Bob Honeycutt (Durham) N. C.	5.9	160	Carey Brewbaker
Bobby Hoppe (Central) Chattanooga, Tenn.	5.11	175	Red Etter
Aubrey Lewis (Montclair) N. J.	6.	192	Clary Anderson
Jim Shanley (North Bend) Ore.	5.9	165	Frank Akin
Roger Taylor (Southeast) Kansas City, Mo.	5.11	180	Cecil Patterson
Gene Worden (Loveland) Colo.	6.	179	Bob Beckett

FULLBACKS

Bob Barrett (Barboursville) W. Va.	6.	185	Dick Ware
Rich Borstad (Detroit Lakes) Minn.	6.	205	Marv Helling
Jim Byers (Reitz) Evansville, Ill.	6.1	190	Herman Byers
John Crowe (Spring Hill) La.	6.2	190	Billy Bancom
Chester Gluchrist (Har-Brack) Brackridge, Pa.	6.2	200	Ken Karl
Kenneth Hall (Sugar Land) Texas	6.1	200	H. L. Jenkins
Billy Kitchens (Lanier) Macon, Ga.	5.9	170	Selby Buck
James Morris (Notre Dame) Quincy, Ill.	6.3	205	Hank Berg

1953 All-American High School Football Squad

SCHOOLBOY wonders from California, Illinois, Texas, and Oregon dominate the third annual All-American Football Squad selected by *Scholastic Coach*.

The Golden State placed six men on the 77-man squad, Illinois placed five, and the other two states four men each. Right behind the leaders with three selectees apiece are nine states—Iowa, Michigan, Minnesota, Missouri, New Jersey, New York, Pennsylvania, Ohio, and Wisconsin.

In all, the Honor Squad embraces representatives from 37 states and the territory of Hawaii. The backfield selections are classified under four headings: *Quarterbacks* are T formation men only. *Tailbacks* are exclusively single wing operatives. *Halfbacks* consist of running, blocking and defensive backs (including wingbacks), and *Fullbacks* are just that.

Unlike last year, when three schools were honored with two selectees each, the 1953 squad represents 77 different schools. It's interesting to note, however, that two schools—Santa Monica, Cal. and Montclair, N. J.—have placed at least one man on each of our honor teams. Aubrey Lewis of Montclair is the only repeater from last season's squad. There will be no repeaters next year, since the entire current squad is composed of seniors.

Following are some of the accomplishments of the 1953 All-stars.

QUARTERBACKS

Ray Brown was outstanding as a passer, runner, punter, and blocker, and was voted the "outstanding player" of Mississippi's 18 largest schools. Art DeStefano completed 59 of 110 passes for 1090 yards in Massachusetts' large school competition. A star pitcher in baseball, he aspires to a professional career.

Don Hawkins from Portageville, Mo., is a small town boy with a phenomenal chucking record—87 completions in 144 attempts for 1771 yards

and 16 tds. He also toted the leather for 249 yards in 36 carries, and booted 46 conversions and three fields goals. Hawkins can dropkick and placekick and punted for a 34.3 average.

Jack Henkel of Eugene averaged .468 on his completions for 962 yards and 12 scores. One of his touchdown tosses went 56 yards in the air.

Jim Ninowski led Pershing to the Detroit city championship and was on every all-state team. A big boy, he was an outstanding runner, passer, and defensive back. Buddy Sasser of Conway is only 150 pounds, but was "captain" of South Carolina's all-state team. He is a triple-threat.

Many Texas critics rated Carl Schlemeyer the best passer in state history—and that includes Sammy Baugh, Davey O'Brien, Bobby Layne, and Doyle Traylor! During the regular season, he completed 149 of 292 tosses for 1408 yards and 12 tallies.

Ernie Zampese was unanimously named "player of the year" in Southern California, a reward for his accumulation of almost 2,000 yards running and passing.

TAILBACKS

Roger Adams led Millard to its fourth straight Utah Class B. title. In three championship playoff games, he scored on runs from scrimmage, punt returns, interceptions, and passed for others.

Norman Anderson of St. James, a human streak of light, possibly has the most spectacular record of all. In a nutshell, he averaged 15.9 yards per pushing try, completed 18 of 30 passes (most thrown on the dead run) for over 500 yards, and scored 26 touchdowns and 42 extra tallies for a 196 total.

Ken Aycock led North Phoenix to an undefeated season and state title and was named captain of the all-state team. He scored 19 tds against top Ariz. and Cal. competition.

Jackie Douglas passed for 117 yards and ran for 436 more. He scored 57 points and tossed for 72 more. All this happened in 11 games.

Walt Fondren of Houston Lamar was a real money player. In the state championship game, when his team throttled Carl Schlemeyer and Odessa,

Fondren ran for 145 yards in 23 carries, hit 5 of 10 passes for 45 yards, ran back two kickoffs 40 yards, punted, and figured in all his team's five scores!

Ronnie LeMieux of Green Bay East didn't play with a championship team, but for the second season he was leading ground gainer in Wisconsin's tough Fox River Valley Conference. Can pass and is a two-year all-stater.

C. R. Roberts, tabbed as California's outstanding running back last year while only a junior, this great youngster scored 57, 187, and 194 points in his three years of play at tailback for Oceanside. He is also a fine trackman, competing in the dashes and weights.

HALFBACKS

Pat Cvengros was unanimously voted the outstanding player in Michigan's Upper Peninsula and his fame reached into Minnesota and Wisconsin.

Alvin Harrington was so versatile that he often moved into a T-quarterback role to throw deadly jump passes. In Hawaii's "big game" before a crowd of 28,000, Harrington led Punahou to a 37-14 victory over St. Louis by scoring twice and racking up 153 yards in 21 carries.

Bob Honeycutt led Durham's co-state champions and was voted outstanding player in the Shrine Bowl against a South Carolina all-star eleven. He is state 100 yard dash champion.

Bobby Hoppe gained over 1400 yards rushing—310 in an important game—and led his team to a state title.

Aubrey Lewis, an All-American in track as well as football, was probably the fastest of all the backs. He has broken away for long runs in every game for two years on a team which has lost only once against the finest opposition.

Jim Shanley was a smallish boy but probably the greatest running back in Oregon. In the first eight games of the season, he scored North Bend's first touchdown; and in state eliminations against Grants Pass was almost enough to win for his team, though playing with a broken ankle!

The break wasn't discovered until after the game.

Roger Taylor set a new scoring record in Kansas City, while Gene Worden was top back in the rugged Northern Colorado Conference.

FULLBACKS

Bob Barrett led Barboursville, a small school, to the West Virginia Class A championship. Barrett was named the No. 1 player in his state.

Rich Borstad was nicknamed "Tank." His great plunging and defensive work featured an unbeaten season for Detroit Lakes.

John Crowe played for a small school which tied Byrd of Shreveport, Class AA runner-up, and was the talk of Louisiana prep circles. He scored 177 pts., averaged 16.4 yards per try.

Chester Gilchrist paced a fine Har-Brack team to a tie for the Western Pennsylvania championship. He was without question one of the toughest backs to stop ever to appear in his area.

Kenneth Hall scored 361 points in regular season games. He broke the Texas scoring record set by Dick Todd of Texas A. & M. and the Washington Redskins. Hall is a splendid trackman, having led his school to the Class B state title for two years.

Billy Kitchens was one of the most outstanding backs in recent Georgia history, while James Morris of Quincy Notre Dame was a bull-like plunger who seems to have a great future ahead of him.

Jim Byers starred on team which had good claim to Indiana title.

ENDS

Tom Peters of Glenbard played with a losing team but led his West Suburban League in scoring. Bill Huther led Edison Tech to the Rochester City title, while Bill Melnik, brother of a West Point lineman, drew raves for his play in N. Y. C.

Wade Patterson was outstanding lineman in the Inland Empire League, a Wash.-Ida. loop. Bob Schmidt led Rochester to the Big Nine crown in Minnesota—the state's toughest competition. Charles Sample was a unanimous all-stater with Iowa City's state champs, and Naseby Rhinehart drew most Montana all-state votes.

TACKLES

Steve Bigelow has kicked 88 extra points for Marshfield in three years—31 this season. Joe Galdi of Passaic and Stan Slater of Orange were in one expert's opinion "the best pair of tackles developed in New Jersey in many a year."

James Linville of Columbia is the biggest player on the squad—also very fast. Dick Maierle was outstanding on a team which placed virtually all its membership on the all-conference selections in Wisconsin. Bruce Schram was Ohio's top lineman according to the A.P.

GUARDS

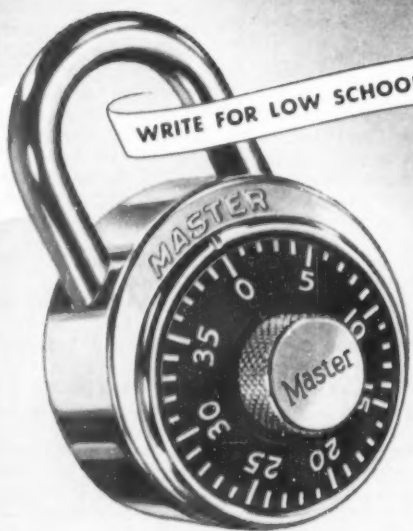
John Pendexter ran a 49.7 quarter-mile on LaGrange's fine mile relay team. Dennis Rust is said to be the finest blocker in Ames history. Mike Anderson was Georgia's "lineman of the year." Wathon Bailey led Haines City, a small school, to a great deal of local fame with his slashing line play. Robert Czub was named the "best football player" in the Albany-Schenectady-Troy area.

CENTERS

Hal Duffy led Portland Central Catholic to its second state title. He did his team's punting and frequently boomed 60-yards, one in the championship game. Bill Kerr has been a standout for three years at tackle, guard, and linebacker. Bill Lord was North Dakota's top prospect.

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ARIZONA—Charles Christopher, E, Carver (Phoenix); Jack Denton, E, North Phoenix; Dick Nordmeyer, T, Tucson; Bill Lairson, T, Phoenix Union; Dominic Renon, G, Globe; Alfonso Gomez, C, Casa Grande; Mike Morales, B, Tucson.

ARKANSAS—Jimmy Clark, E, and Richard Bennett, T, Little Rock; Arvale Rogers, G, Russellville; Tom Hillman, G, Stuttgart; James Henner, C, Parkin; Bobby Bates, B, El Dorado; Bill Bann, B, Texarkana; Jerry Ferguson, B, Rogers; Don Horton, B, DeWitt; Bobby Rogers, E, Jonesboro.

CALIFORNIA—Dick Dorsey, E, and Dan Peterson, C, Santa Monica; Mel Flohr, E, Santa Rosa; Frank Gremia, E, McClatchy; Steve Hanifan, E, Covina; Richard Beam, E, Whittier; Joel Freis, E, Los Angeles; Gary Mullins, E, Santa Barbara; Gerald Schweitzer, E, and John Contestabile, QB, Hawthorne; Larry Nunley, T, Tracy; Ken Pierce, T, San Lorenzo; Dan Sotelo, T, Madera; Bill Elkins, T, Delano; Ed Powell, T, Torrance; Albert Aguilar, T, Banning; Noel Robinson, G, St. Ignatius (S. F.); Sherian Emert, G, Richmond; Fred McLean, G, Chula Vista; Al Gonzales, G, Woodland; Bill Patten, G, San Diego; Russ Steele, C, Mt. Diablo; John Sullivan, C, Pomona; Willie Pennix, C, Jefferson (L. A.); Delmas Whittier, QB, Oroville; Ray Rosa, QB, Jefferson; Rafer Johnson, B, Kingsburg; Roosevelt Beatty, B, Sacramento; Dick Bass, B, Vallejo; Art Forbes, B, Poly (S. F.); Bob Schmidt, B, Burlingame; John Stewart, B, Lincoln; Lou Valli, B, Bellarmine; Carl Gordon, B, Berkeley; Rich Spiekerman, B, Lodi; Archie Schmitt, B, and Rollie Gilliam, QB, Taft; Don Duncan, B, Alhambra; Dean Philpott, B, Anaheim; Barry Billington, B, Inglewood.

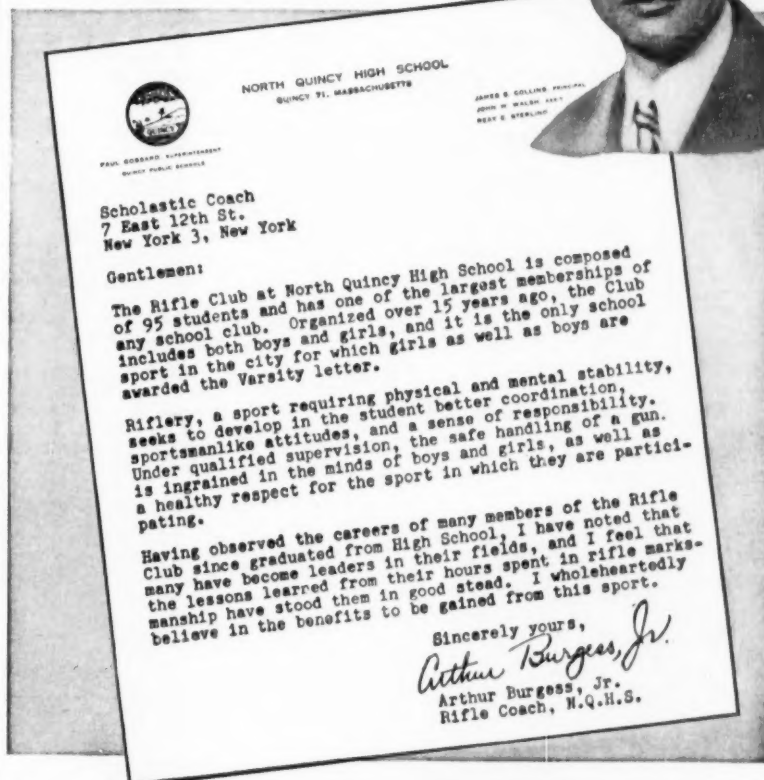
COLORADO—Bill Rhoten, E, John Clark, T, and Tom Brown, G, Fort Collins; Terry Williams, QB, Holly; Herb Pingree, B, East Denver; Eloy Mares, B, Annunciation (Denver).

CONNECTICUT—Al Badger, E, Hillhouse (New Haven); Joe Mozzicato, E, Bulkeley (Hartford); Bruno Amato, G, Stamford; Dick Dooley, B, Middletown; Charles DeMartin and John Esposito, B, Wilbur Cross (New Haven).

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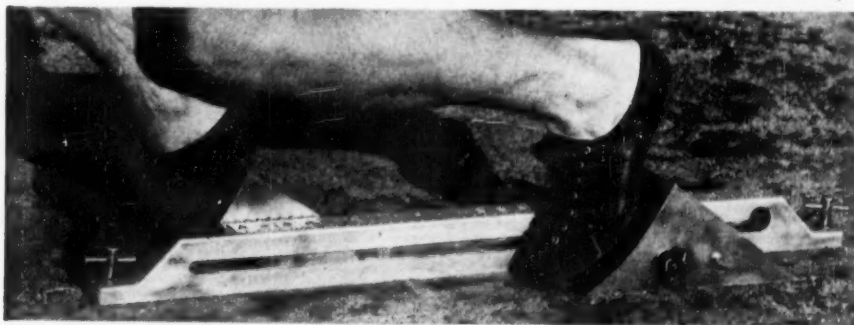
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Shot Putting

(Continued from page 40)

In a sense, they are falling forward. The accompanying swing of the free leg forward and the vicious drive from the rear foot gives the athlete and shot the initial momentum that must be increased as the action progresses.

During the hop, the right foot drags rather than leaves the ground, and this foot reaches the center of the circle (about 38" with most putters) before the swinging left leg comes down. Thus a "rocker" action is accomplished, which is another important feature of the style.

In the center of the circle, O'Brien and Fuchs plant the right foot almost facing the rear of the circle, while Hooper and others place it near to a 40° angle. In any event, this position, with the toes of the right foot pointing toward the rear, tends to prevent a rotation into the put before the correct lifting action takes place.

It is possible that from the standpoint of keeping the putter in a closed position—thus preventing the left foot from dropping into the bucket—this rear-facing right foot is one of the most solid contributions that Fuchs and O'Brien have made to the advancement of shot putting form. It may be that the closed position they attain when the right foot faces the rear is the secret of their ability to exert greater force on the shot. Actually, it is probably a combination of the two.

In mentioning the left foot and its role in the put, one must only observe the pictures of Hooper to realize the tremendous use a good putter can get from a properly handled left leg.

Generally, the left leg is supposed to serve two functions once it's planted next to the toe board. First, it checks the lower trunk in order to whip the upper trunk "up and over." Second, it adds additional force to the final upward thrust as the athlete drives into the shot just prior to its leaving the hand.

However, Armas Valste, the famous Finnish coach, revised our own opinion on this phase. The pictures of Darrow Hooper bear out Valste's contention that the left leg, in addition to the two mentioned functions, also aids in the lifting action before the right leg has exerted all its force. The lifting action is thus continuous from the right leg, to both legs, to the left leg alone in the final stage of the put.

In any case, it serves to emphasize the tremendous importance of placing the left leg very close to the center of the toe board, where it can be utilized to the fullest extent in the put. Fuchs and O'Brien made almost all their puts with the left foot very close to the center of the toe board.

In the center of the circle, the Fuchs-O'Brien-Hooper type of putter is characterized by the same extreme sideward bend of the trunk they held at the rear of the circle.

O'Brien and Hooper, while maintaining this stretched position, turn more toward the rear of the circle than Fuchs. But the principle of increasing the arc over which the thrust is to take place by leaning farther back is the principle of all three men.

Ken Doherty, Penn's famous coach, feels that this backward lean also makes an upward and outward action more possible; consequently adding height and thus distance to the put.

It must, of course, be obvious that the putters using this form lift the entire right side of the body as they drive up and out with the shot. Regardless of refinements made in style, the principle in the final stages is just this.

It must be pointed out that where a putter has a well-placed left foot to "ride up" on, he very often will have difficulty "following through," as the leg serves as a fulcrum that he's working against. Yet it's felt that the advantage far outweighs the disadvantage in force applied.

The reverse is merely the final stage of the follow through. It's necessary because the athlete has maintained contact with the shot so long that he's in danger of fouling out of the front of the circle. He reverses his feet, then to keep his balance.

Yet we still see men reversing because of a faulty balance stemming from (1) putting the left foot to the left of the toe board, or (2) coming around rather than up into the put, or (3) not maintaining a closed position long enough. Fuchs, O'Brien, Hooper, and others of the same school aren't usually guilty of these faults because of sound balance.

In conclusion, it must be stated that this particular form analysis shouldn't lead all young shot putters down the same road that Fuchs, O'Brien, Hooper, Nilsson, and others have taken. Physical qualities must dictate the style to be used. While a form objective may be clear in the mind, it often takes years to develop the body to the point where it's capable of accomplishing the mind's desires.

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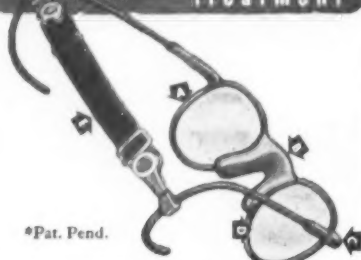
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Hitting-Area Approach in Tennis

(Continued from page 7)

ing on the speed of the ball and the speed of the racket head. The ball "folds," too, the amount also depending on these two factors.

In short, a pocket has formed in which you've "caught the ball." ("Catch the ball with your racket and throw it into court" is an expression you may find helpful. I like to compare it to using a lacrosse stick.) When the above conditions exist, your pupil "feels" the ball. But he will feel the ball only if he's relaxed throughout the swing. (Some tension is natural at point of contact.)

WATCH THE BALL

Watching the ball is imperative to sound execution in the hitting area. To assure your pupil watching the ball, have him use the back-bounce-hit trick. Have him say "back" (and act on it) when you hit the ball to him, "bounce" when the ball bounces, and "hit" at point of contact.

Point out the difference between focusing the eyes on the ball throughout its flight from racket to racket (they won't actually be able to see the ball hit the racket) and merely "seeing" it somewhere out there on the court.

Finally, to convince him of the importance of watching the ball, outline the four reasons for it. Tell him he should watch the ball:

1. To make himself aware of it as something to react to the moment it leaves his opponent's racket.
2. To enable him to determine his correct position in relation to the ball.
3. To determine the speed of the ball.
4. To enable him to hit the ball in the center of the racket.

TAKE RACKET BACK EARLY

There is one point in the hitting area, and one point only, where the ball can be contacted with maximum results. If the racket is taken back too late, the ball will be hit behind this spot. If consciousness of lateness causes one to hurry the racket, the ball will be hit too far out front.

This, of course, is the timing problem. The ball must be timed at the correct spot in the hitting area. Be sure your pupils are taking the racket back early enough to do this. Only in this way will they achieve

a timed, controlled, unhurried swing through the hitting area.

ASSUME PROPER POSITION

Without proper position, the hitting area will be shortened to the point of ineffectiveness. And being too far away from the ball is as serious as being too close.

Proper position can best be expressed by the term "comfortable arm's distance from the ball." It doesn't mean that the arm must be outstretched completely at point of contact. The elbow can be bent.

Here the footwork problem enters. The purpose of footwork is simply to achieve a balanced base at the correct distance from the ball. Since the common position fault is overcrowding the ball, I've found that slide steps along the baseline help maintain the proper distance. These are made with the upper part of the body perpendicular to the net. (The racket is back or going back as the steps are taken.)

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The right foot is the lead-off foot, then the left comes up to it as the pupil simultaneously hops off his right. When the right foot is the right distance from the ball, the left comes into position. The pupil thus achieves a better balanced base (the feet well apart) from which to hit, and invariably distances himself farther from the ball than he would if he merely ran across the baseline to get the ball.

As this balanced base and distance from the ball are important to the hitting area, show your pupils the difficulty they will get into if not sound in this respect.

SHIFT YOUR WEIGHT

The longer the hitting area, the sounder the hit. To show your pupils the importance of shifting the weight from the rear foot to the front foot, draw a straight line on the court. Mark a cross on this line for the point of contact. Next, draw a line perpendicular to the first line about a half foot behind this cross, and then draw a similar line about two feet in front of the cross. There's your hitting area.

Now position your pupil at comfortable arm's distance from point of contact. (The cross should be about opposite or two inches ahead of the left foot if a standard Eastern grip is used.)

Now have him swing at an imaginary ball, keeping his weight back on the rear foot. Show him how soon this sends his racket across the hitting area and around his body. The follow through (which is actually only the distance that the racket is able to follow the direct flight of the ball) is cut down considerably, if it exists at all.

Now have him shift his weight from the rear to the front foot, and



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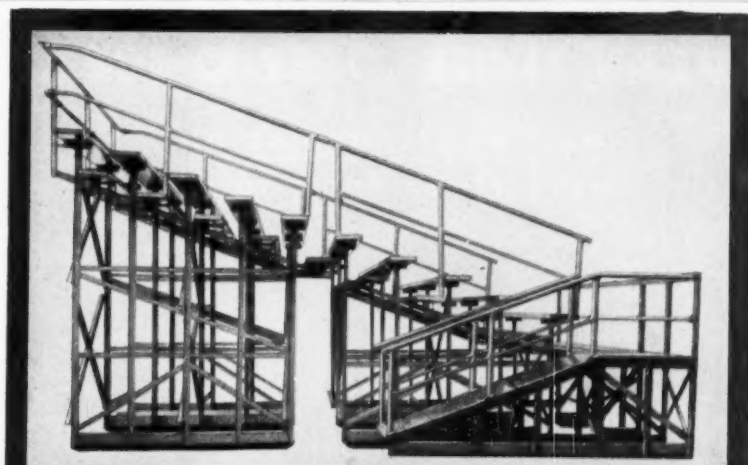
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he'll observe the difference in the way he'll be able to go out on the flight of the ball with his racket head (follow through).

INSIDE-OUT CONCEPT

The next principle—that of swinging your racket from inside the intended line of flight toward the outside—isn't easy to grasp. It takes much work and many means of expression to get it across. But it's worth all the time, since it's absolutely essential to sound action in the hitting area.

The idea to put across here is that the racket should be swung outward from the back position. You may put it this way: Standing in the middle of the court with the racket back and the feet perpendicular to the net, swing the racket approximately toward the net post on your fore-hand side.

Another way of expressing this inside-out swing is that the elbow goes from relatively close to the body to a point farther away. The racket continues on this outward path until it gets behind the ball and then goes straight through the hitting area.

ROTATE YOUR BODY

Use the same test here that you did under "shift your weight." When your pupil swings his racket in without rotating his body, he'll readily see that the racket goes across the hitting area. With a good rotation, he'll see how the racket is able to go out on the flight of the ball through the hitting area. The rotation should be complete, from the ankles and through the hips to the shoulders.

CORRECT CONTACT

All the points so far have had to do with sending the racket through the hitting area. Now we come to the control problem in the hitting area. It is two-fold—latitudinal (depth control or plane of flight of the ball) and longitudinal (direction of the ball).

Let's take the latitudinal control first. The upward swing of the arm sets the level of the flight, and the swing should ordinarily be upward regardless of how much you hear about a level swing. (Try hitting the ball over the net from the baseline with a level swing sometime.)

This upward swing also imparts some top spin to the ball. However, the angle at which the racket face hits the ball has much to do with its plane of flight. The racket should be open (face tilted skyward) on low shots, flat (perpendicular to ground) on medium shots, and closed on high ones.

Now for control of direction in the hitting area. The racket should line up behind the ball, perpendicular to the intended line of flight, and should contact the ball in this position.

It's understood that the racket is swinging in that direction also, and that the feet are in line with the intended flight of the ball (from a somewhat open stance on cross-court shots to a more closed one when hitting down the line).

Again, hitting the ball early or late also enters into direction; early for cross-court shots, late for down the line.

FOLLOW THROUGH

If the first eight points are followed, the follow through will be automatic. But one misconception should be cleared up. The follow through in the stroke is only that section I have indicated. It stops when the racket can no longer go out on the flight of the ball.

The popular conception of the follow through is the racket ending well up over the shoulder or around the body or out straight in front of the body. This doesn't seem logical when you consider that you can follow through only as long as you're on line with the object you're hitting.

What so many call the follow through, then, is merely an ending of the stroke. The follow through occurs in the hitting area.

VARIANCES ON BACKHAND

While a number of general variances exist in connection with the backhand, the only variance in the nine fundamentals we've listed comes under No. 7. On the backhand, the rotation of the body isn't marked (though there's some rotation) until the racket contacts the ball.

This is a most important point. Show your pupil how he'll come "across the hitting area" if he rotates his shoulders too much at the beginning of the swing.

The reason for this rotation on the forehand is that you're swinging from the rear point of the body (rear shoulder), and cannot go through the hitting area unless the body turns with the swing. On the backhand, you're swinging from the front point and the body doesn't interfere with the action through the hitting area, except when you rotate too early.

There are other variances. The grip varies, as you know. The ball must be hit farther in front, about a foot in front of the right hip, and the right foot should always be somewhat across the left.



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- (Inside Back Cover)
☐ Coaches and Trainers Handbook

CONVERSE RUBBER (29)

- ☐ 1953 Basketball Year Book

CORTLAND RACQUET (38)

- ☐ "Tennis Tactics" Book
☐ Badminton Book
How many _____

CRAMER CHEMICAL (47)

- ☐ Information on Hurdling Supplies and Textbooks

DUCOMMUN, M. (46)

- ☐ Catalog on Stop Watches

FAIR PLAY (26)

- ☐ Catalog on Electric Scoreboards

FENNER-HAMILTON (56)

- ☐ Literature on Web Bed Trampoline

GENERAL SPORTCRAFT (2)

- ☐ Official Game Rules Booklet
☐ Rules Booklets for Badminton, Deck Tennis, Shuffleboard, Table Tennis, Bat Tennis

H. & R. MFG. (44)

- ☐ Booklet on Spring Spts. Dry Line Markers

HARVARD TABLE TEN. (32)

- ☐ Table Tennis Tournament Charts and Instructional Booklet

HILLERICH-BRADSBY (27)

- ☐ Famous Slugger Yearbook
☐ Official Softball Rules

HILLYARD CHEMICAL (4)

- ☐ Gym Marking Chart
☐ Basketball Scoring and Scouting Book

HODGMAN RUBBER (49)

- ☐ Complete Athletic Clothing Catalog

HOUSE OF HARTER (53)

- ☐ Catalog on Track Awards Ribbons and Complete Line of Trophies and Medals

HUNTINGTON LABS. (17)

- ☐ Folder "The Key to Gym Floor Finishing"
☐ Basketball Coaches Digest (free to coaches, 50¢ for others)

HUSSEY MFG. (16)

- ☐ Catalog on Steel Portable Bleachers
☐ Water Sports Equipment Catalog

JOHNSON & JOHNSON (1)

- ☐ Information on Complete Line of V Front Supporters

K. & P. CO. (52)

- ☐ Information on Dow-metal Crossbars and Standards

KAHN, ARTHUR (51)

- ☐ Address of Nearest Uniform Maker

KING-O'SHEA (36)

- ☐ Information on Custom-Built Uniforms

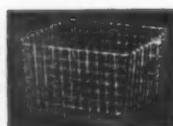
McKESSON & ROBBINS (15)

- ☐ Sample of Octofon for Athlete's Foot

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on which advertisement may be found)

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- ☐ Brochure on Stainless-Steel Key-Control Padlocks

MEDART PRODUCTS (19)

- ☐ Catalog on Telescopic Gym Seats, Steel Lockers
☐ Information, Acromat-Trampoline
☐ Catalog on Basketball Backstops, Scoreboards
☐ Catalog on Dressing Room Equipment

MERCURY SYSTEM (46)

- ☐ Pamphlet on Care of Athletic Shoes

MINNESOTA MINING & MFG. (39)

- ☐ Information on Scotch Brand Plastic Tape Floor Marker

NADEN & SONS (46)

- Electric Scoreboards and Timers
☐ Baseball Catalog
☐ Basketball Catalog
☐ Football Catalog

NATIONAL SPORTS (52)

- ☐ Price Circular on Jim-Flex Gym Mats

NISSEN TRAMPOLINE (37)

- ☐ Literature on Trampolines
☐ Booklet, "Tips on Trampolining"

OCEAN POOL (51)

- ☐ Catalog of Complete Line of Swim Equipment

PLAYTIME EQUIP. (53)

- ☐ Literature on Welded Steel Bleachers

QUAKER OATS (41)

- ☐ Booklet, "How to Play Baseball," by Ethan Allen
How many _____?

RAWLINGS (3, 35)

- ☐ Catalog of Equipment
☐ Book, "Care and Cleaning of Uniforms"

REGAL AWARDS (20)

- ☐ Catalogs of Sports Trophies and Awards

REMINGTON ARMS (45)

- ☐ Instructor's Manual on Operation of a Rifle Club

RIDDELL, JOHN T.

- (Inside Front Cover)
☐ Booklet and Catalog, "The Story of Quality Athletic Shoe Construction"

ROBBINS FLOORING (54)

- ☐ Information on Iron-bound Continuous Strip Maple Gym Floors

SAND-KNITTING (50)

- ☐ Complete Catalog of Athletic Equipment

SANI-MIST (50)

- ☐ Complete Details of Sani-Mist Method of Athlete's Foot Prevention

SEALAND, INC. (23)

- ☐ Catalog of Softballs, Baseballs, Baseball Shoes

SNYDER TANK (54)

- ☐ Information on Steel Bleachers

SPANJIAN SPORTS. (48)

- ☐ Football Catalog

STEWART IRON (30)

- ☐ Catalog of Fences, Baseball Backstops, Wire Mesh Partitions, Railings, etc.

TRACK & FIELD SUPPLY (48)

- ☐ Catalog on Complete Line of Equipment

VOIT RUBBER (31)

- ☐ Catalog on Complete Line of Rubber-Covered Balls and Other Sports Equipment

WILSON (6)

- ☐ Catalog

NAME _____ POSITION _____

(Principal, coach, athletic director, physical director)

SCHOOL _____ ENROLLMENT _____

CITY _____ STATE _____

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February, 1954

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The colorful 65, now available in popular maroon in addition to 5 other school colors. For the first time available at the same price as the natural color 65. Only pad with complete color range.



COLORS

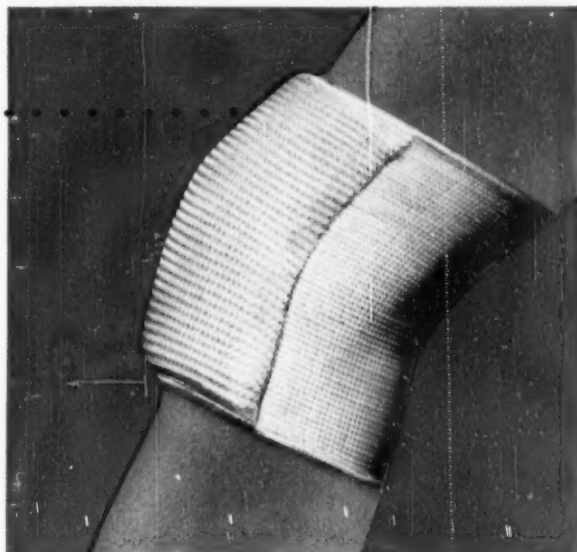
Maroon
light gold
royal blue
kelly green
black
and
scarlet.

ANNOUNCING THE NEW #70 KNEEPAD!

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